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12 January 1986

Worldwide Report

ARMS CONTROL

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WORLDWIDE REPORT

ARMS CONTROL

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SDI AND SPACE ARMS

KRASNAYA ZVEZDA ON SDI, NEW U.S. JOINT SPACE COMMAND

Moscow KRASNAYA ZVEZDA in Russian 15 Oct 85 p 3

[Article by Capt 2nd Rank Ye. Nikitin: "Up the Steps of Madness"]

[Text] "Nuclear megadeath is nothing to the reactionary circles that dream in thousands of warheads, they are increasing their monstrous arsenal on Earth and threatening outer space, contemplating 'star wars,'" writes G. M. Grechko, a two-time Hero of the Soviet Union and a pilot and cosmonaut of the USSR, in an article that appeared in the recently published special edition of the magazine NOVOYE VREMYA. This edition was formulated as a supplement to the magazine titled "The Arms Race: Do not Permit it in Space and End it on Earth."

With extensive factual material, the authors show how the plans to militarize space were conceived and spread, how the increase of the Pentagon's nuclear potential in combination with the notorious "star wars" program threatens peace and convincingly exposes the adventurism of the current U.S. leaders, who have begun to dream of achieving military superiority over the Soviet Union by creating space weapons.

American imperialism is climbing the steps of madness toward the beginning of a principally new round of the arms race. Practically all systems of space weapons are presently at various stages of development and testing, including chemical lasers, elementary particle accelerators, X-ray lasers with a nuclear surge, electromagnetic cannons, satellites with small self-guided missiles...

The authors emphasize that an especial danger of the adventurist policy of the United States is that the arms race can develop into a qualitatively new phase--uncontrollable processes will begin in the area of armaments and the risk of nuclear war arising will increase sharply. Common sense suggests that the only way out of the situation that has been created is to freeze the nuclear arsenals of all sides, halt the preparations for creating new attack weapons for space placement and on that basis immediately go over to a decrease in the accumulated stockpiles of arms.

The practical affairs of Washington demonstrate that across the ocean they do not wish to heed the voice of reason. The recent militarist actions of the White House are a particular challenge. The United States conducted testing of the ASAT anti-satellite system against a real target in space. There

then followed testing of a land-based laser installation during which a laser beam was directed against a Terrier-Malamute missile and tracked it in flight. The conducting of underground nuclear weapons testing continues.

To coordinate efforts in militarizing space, on September 23 the United States began to operate the Joint Space Command of the U.S. Armed Forces with staff headquarters in Colorado Springs (the state of Colorado). As shown by the authors of the special supplement to NOVOYE VREMYA magazine, the initial program of operation of the Joint Space Command has already been formulated and intermediate targets and timetables have been projected.

Also revealing are the resources assigned to basic research and development in the 1984-87 fiscal years. Appropriations for the main types of activity within the "star wars" framework over this period will increase a hundredfold: from 50 million dollars in 1984 to 4.9082 billion in 1987.

The accumulation of ever newer and more destructive types of weapons both on Earth and in space only heightens international tension. As noted by M. S. Gorbachev at a meeting with French parliamentarians, the world situation is so tense "that it has now become extremely difficult to negotiate not only on the complicated issues that cannot be put aside, but on relatively simple problems. If we do not stop the current operative tendencies, we may not be able to overcome their monstrous inertia. Discussion will become more difficult."

The value of the supplement to NOVOYE VREMYA magazine is that light is thrown upon the most pressing problem of modern times from different angles. The material has a rich style, is filled with illustrations and is set forth in popular style.

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CSO: 1801/45

SDI AND SPACE ARMS

NORWEGIAN GOVERNMENT OPENS DISCUSSION OF SDI

Debate Splits Parliament

Oslo AFTENPOSTEN in Norwegian 3 Dec 85 p 5

[Article by Morten Malmo: "SDI Dispute Divides Storting"]

> [Text] The Labor Party and SV [Socialist-Left Party] have joined forces in opposing the government's stand on the American space research program, SDI. "It is impossible to distinguish between the civilian and the military aspects of SDI," Hanna Kvanmo of SV told AFTENPOSTEN. "This is the biggest headache the government has," said Einar Forde (Labor) after Harald Synnes of the Christian People's Party told Storting yesterday that it is inappropriate for Norway to participate in any research program aimed at weapons development.

The controversy over SDI was a political highlight in the more than 6-hour debate Storting had yesterday on the 1986 budgets of the Industrial Affairs Ministry and the Oil and Energy Ministry. Industrial Affairs Minister Petter Thomassen said the government would not oppose Norwegian industry if it wanted to look into the possibilities of participating in the civilian aspects of the SDI program. The Conservative Party's industrial policy spokesman in Storting, Per-Kristian Foss, said it would put Norway even further behind in the technological race if Norwegian firms were summarily prevented from taking part in projects that involve American SDI funds.

The parliamentary leader of the Christian People's Party, Harald Synnes, said that it is inappropriate for Norway to take part in any research program aimed at weapons development. "It should also be obvious that a Norwegian participation that can be interpreted as a general acceptance of the Star Wars program is equally inappropriate," said Harald Synnes.

"These are clear reservations. They are so clear that it is easy to see that the distance between the government parties is greater than we had thought," the Labor Party's industrial policy spokesman, Einar Forde, said in a comment on Harald Synnes' remarks.

"And besides that the distinction between civilian and military aspects of SDI is fictitious," said Forde. The same point was made by SV parliamentary leader Hanna Kvanmo, who told AFTENPOSTEN that it is impossible to accept the SDI program in any case. She also pointed out that Storting must now be briefed on SDI's European alternative, Eureka, so that a stand can be taken on that project.

The Industrial Affairs Ministry's budget was increased by 47 million kroner yesterday in relation to the government's budget proposal and the government parties' budget compromise in Storting. This occurred when the Labor Party, SV and the Progressive Party voted for additional funds for the Norwegian Council for Scientific and Industrial Research, national development contracts and ore exploration efforts in North Norway. Following yesterday's vote the Industrial Affairs Ministry's budget will be around 2.5 billion kroner next year.

The Labor Party, SV and the Progressive Party also added 4 million kroner for the Oil Directorate and 3 million kroner for energy research. These two items came under the Oil and Energy Ministry's budget.

Industry Spokesman Advises Participation

Oslo AFTENPOSTEN in Norwegian 5 Dec 85 p 43

[Op Ed article by Arnulf Ingebrigtsen, Director of the Federation of Norwegian Industries: "Norwegian Industry Should Take Part in SDI Research"]

[Text] When Storting discussed the Industrial Affairs Ministry's budget this week, members also brought up Norwegian participation in the American SDI program. This issue, which had previously appeared to be largely a foreign policy concern, thus acquired clear industrial policy aspects as well.

Spokesmen for the government and the government parties kept the door open for Norwegian industrial participation in what is probably the biggest international high technology research program at this time. But unfortunately there were others who made vigorous attempts to close the door for Norwegian firms and research institutions.

Obviously the question will be debated in the future. Many important aspects can be clarified in the process. But on the basis of Monday's debate in Storting we must issue a strong warning against political parties in Storting becoming so enmeshed in a self-created problem that Norwegian industry and research will be unjustifiably isolated from what is going on. This could be serious. Other NATO countries are taking an active part.

The Labor Party's main industrial policy spokesman used two dubious arguments. First he gave the impression that Norwegian industry is not really interested in this research program and then he tried to stigmatize firms "that go in for this" as practically immoral and accused them of acting contrary to the position of the government and Storting.

Thus two points should be made clear before we continue the debate on this issue.

In the first place Norwegian industry is very interested in this research program. For example, just before the debate the Federation of Norwegian Industries sent a letter to the Storting Industrial Committee. It would be very valuable for Norwegian firms to be able to cooperate with American circles that are definitely ahead in two technological areas that have been designated as areas of emphasis for our own policy, namely information technology and materials technology. Most of the research going on under the umbrella of what the Americans call SDI will have civilian applications. A lot of civilian research in the United States will be channeled into this program.

This point illustrates another important aspect of the issue. We must not mix the ideas of military and civilian research together into a meaningless and unworkable problem of definition. Or should we react in the future to the slightest suspicion that one research result or another could be used in connection with a defense product?

In Norway we have traditionally objected to involvement in the production and especially the export of what are commonly called "weapons" or military materiel. But in everyday life we have accepted the fact that many industrial processes and products have practical applications for both civilian and military usage. For the most part this has involved traditional industrial activities. One of the reasons for this is that the high-tech element in our industry is not as strong as it is in many other countries. But the point of conducting research under the SDI umbrella is that it involves a more advanced industrial level, namely advanced technology. It would be unfortunate if we embrace at this particular stage an industrial policy of self-denial that prevents us from working to create an advanced industrial sector in this country.

Technological advances in such fields as electronics, materials technology and so forth can have important applications for both so-called civilian and military products. A number of technological solutions have been discovered in the civilian branch of industry that can also be used in the field of military defense.

And this goes both ways. Many research projects in the defense sector have had important civilian spinoff effects. This is true of such things as new computers, radar, communications systems, laser technology and improved metal and fiber materials.

Sweden is an example of a country with an advanced industry. In recent years there have been debates over purchasing highly developed products from Sweden ranging all the way from missiles and planes (based on a high level of expertise in such areas as electronics) to military cross-country vehicles and trucks. These come from companies that we admire for their industrial level--and that we would like to have in Norway.

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CSO: 5200/2592

SDI AND SPACE ARMS

OVERVIEW OF PROJECTED FRENCH PARTICIPATION IN EUREKA

Paris EUREKA: LA RENAISSANCE TECHNOLOGIQUE DE L'EUROPE in French Jun 85

[Official document of the French Republic; typed version published by CESTA [Center for Studies on Advanced Systems and Technologies]; 77 pages, not numbered]

[Text] Paris, 27 June 1985

It is now two months since the EUREKA program was launched.

The first results are already considerable. Witness the agreements already signed in the fields of data processing and computer-integrated manufacturing or electronic components by the following manufacturers:

- MATRA [Mechanics, Aviation and Traction Company] and Norsk Data, on compact vector computers;

- Bull and Siemens, on large digital computers;

- GEC [General Electric Company], Philips, Siemens and Thomson, on advanced microprocessors, gallium arsenide integrated circuits, microwave components, high-density memories, flat-panel screens, and all kinds of sensors;

- Aerospatiale and MBB [Messerschmidt-Boelkow-Blohm], on technologies of the future in their fields of expertise.

Other negotiations are in progress; we are confident that they will materialize in the near future.

The working document attached, based on the work of a group of experts from industrial and research circles, aims at providing information on projects already finalized.

The industrial enterprises and research centers mentioned are likely to be interested in such projects.

Obviously, however, all industrial enterprises and research centers concerned must indicate their desire to associate and regroup themselves according to flexible formulas and variable configurations.

In addition, the first options selected represent "beacons" in the universe of high technologies; however, other projects could be explored profitably.

In the weeks and months to come, we shall have to continue our work in common in order to build progressively the Europe of high technologies.

The minister of foreign relations,
Roland Dumas

The minister of research and technology,
Hubert Curien

[Introduction]

In view of the considerable efforts made in the United States and in Japan, Europe--if it is to meet the technological challenges of the end of this century--must hasten to acquire the knowhow which, tomorrow, will be at the heart of the third industrial revolution. It must hasten to choose between options that will lead either to decadence or to the technological Renaissance of Europe.

In this respect, the next 15 years before the year 2000 will be decisive.

But we already know where to direct the bulk of our effort: information technologies, production technologies and the technologies of vegetal and living resources represent in fact the hard core of the knowledge and talents that will open to us the doors of the third millenium.

These techniques form a coherent whole, an original architecture whose components are computers and software, robots and "flexible" manufacturing plants, lasers and new materials, communications and transports, and finally the biotechnologies.

Our future hangs on the consolidation and strengthening of this knowledge and knowhow. They will condition our ability to renovate working conditions, renew human relations, remodel training, health and leisures... In a word, we must master these technologies to ensure our autonomy of decision and our independence.

This is why we must mobilize European energies and abilities on well-defined objectives and programs with clear goals. Five fields are decisive: data processing, telecommunications, robotics, materials and biotechnologies. Together, we must explore the frontiers of knowledge in these fields and master their practical applications.

The technological Renaissance of Europe will first require expertise in the technologies of information, production and vegetal and living resources.

Information technologies, which can be used in a multitude of fields by means of components and software, will open wide the road to the progress that will affect all other sectors of activity.

Components will be the "basic pawns" available to human ingenuity which will transform them into a variety of products and a multiplicity of services: artificial intelligence and expert systems will mobilize knowledge and, in time, make it more accessible. We shall have to analyze better and understand zetter, the better to transmit and communicate. Supercomputers, finally, will help us better manage organizations and better predict the evolution of natural systems, from meteorology to social security.

Tomorrow, the fate of our societies will largely depend on human communications. In this case, technology is bearing huge promises: voice, data, image transmission. Universities without walls and telecommuting. These are innovations of all kinds that will be made possible by a vast range of communication tools.

Then, production technologies, in the form of flexible and automated factories, will form the basis of new industrial forms. Instruments of negotiation between social groups, they will be the source of a veritable industrial renaissance. As for robots, beign mobile they will give us access to hostile worlds: ocean deeps, high pressures, extreme cold, space. They will also free us from dangerous and insalubrious work.

Finally, mastering the technologies of vegetal and living resources is crucial, as our food, our health, the revitalization of zones that are now desert depend on improved control and implementation of these technologies. Biotechnologies offer us solutions to develop and enrich our agricultural resources. Artificial seeds are thus signalling the dawn of a new agriculture.

Dominating the new era of information means:

First of all, designing and producing basic components, the indispensable elements of any automated system: microprocessors and memories. The "europrocessor" is at the heart of the Europe of the future.

1. Developing large-capacity computers;

2. Creating tools to design and develop artificial intelligence and expert systems;

3. Developing artificial organs to endow our automated systems with sight, hearing and touch.

Dominating the new era of communication means:

1. Establishing an optic communication network that will transport voice, data and image communications at low cost;

2. Enabling research centers to communicate through suitable networks, and enabling the machines of the future to dialogue through high-speed connections;

3. Mastering electronic imagery, because of its economic, and also because of its cultural impact.

Dominating the new era of automata means:

1. Designing a fully automated factory, i.e. setting up a communication network between automata. This prototype development should identify the conditions of transfer of automated systems to the medium-size businesses that form the bulk of the industrial fabric of European countries.

2. Developing laser and particle-flow machining and assembly. The cutting, assembly and surface-treatment of old and new materials will be transformed by these new tools which must be tested, developed, integrated into the actual industrial context.

3. Developing miniaturized and mobile robots to operate in extremely severe environments; e.g. a submarine robot and a robot to intervene in case of natural disasters.

4. Developing and embodying into mobile robots and automated factories all the available knowhow in optronics, new materials, energetics and communication.

Dominating the new era of vegetal and living resources means:

1. Developing artificial seeds adapted to soil and climate conditions.

2. Improving the conditions under which agrifood resources are processed.

3. Taking better advantage of ocean resources.

4. Controlling desert expansion.

The challenge is worthy of Europe:

- a Europe able to set clear objectives for itself;

- a Europe able to endow itself with simple and efficient tools to manage its research and development;

- a Europe able to meet the new challenges and to forget the internal barriers that were erected over the years;

- a Europe able to understand that the fragmentation of its energies and the scattering of its talents would lead to its decline; that the only guarantee of its Renaissance is a joint effort of all nations, all industries and all administrations.

Yesterday, among Europeans, we were able to master the stakes of energy and space. Our particle accelerators, our fusion and breeder machines, our aircraft, our space launchers, our satellites prove that we have already gone a long way. We must now work together on the key technologies of information, production and life.

Five programs materialize our determination to act: Euromatique, Eurobot, Eurocom, Eurobio, Euromat.

The minister of foreign relations,
Roland Dumas

The minister of research and technology,
Hubert Curien

5 Priority Goal-Oriented Programs

- Euromatique	Large computers Parallel architectures Artificial intelligence and expert systems High-speed silicon AsGa
- Eurobot	Third-generation robotics Automated factory, computer-aided design and manufacturing Lasers
- Eurocom	Research network Wideband-network equipment
- Eurobio	Artificial seeds Biomedical engineering
- Euromat	Ceramics turbine

This document is a synthesis of the work of expert groups from the industry and from the administration, organized in the context of the Eureka program. It presents a set of well-defined projects meeting the program's criteria. Other projects are still in the study stage and, they too, may be the subject of agreements.

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- Gallium arsenide components
- European custom circuit plant

Euria
- Line of symbolic machines
- Expert-system development tools
- Multilingual information system
- Control and monitoring of major industrial processes

Eurobots
- Civil-security robots
- Agricultural robot
- Flexible and automated factory for highly-integrated manufacturing
- CO_2, CO, excimer and free-electron lasers

Eurocom
- High-definition television

Eurobio
- Artificial seeds
- Alternate fuel

Small and Medium-Size Industries in Eureka

[I] Euromatique: Large Computers, Parallel Architectures, Artificial Intelligence and Expert Systems, High-Speed Silicon, GaAs

- Large vector computer
- Highly parallel computer architectures
- Synchronous-architecture multiprocessor machine
- Mass memory
- Software engineering center
- Dedicated circuits and line of symbolic machines
- Generalized tools for expert-system applications development
- Multilingual information system
- Control and monitoring of major industrial processes
- Europrocessor
- 64-megabit memory
- European GaAs-circuit plant
- European custom-circuit plant

Digital Computers - Parallel Architecture

- Large vector computer

Develcpment of a 30-Gigaflops digital supercomputer by 1992 to carry out the simulations required to design complex systems (scientifique laboratories, aeronautics and automobile industries, meteorology, etc).

- Highly-parallel computer architectures

Development of a highly-parallel machine with a power in excess of 10 gigaflops by 1992.

- Synchronous-architecture multiprocesor machine

Development of a multiprocessor synchronous-architecture machine by 1992, for numerical analysis, signal and image processing.

- Mass memory

Development of large high-capacity storage disks for business-oriented and scientific large or medium-scale computers.

Software Engineering

- Software Engineering Center

Creation of a European software engineering center to coordinate R&D, dissemination and information operators.

Artificial Intelligence - Expert Systems

- Dedicated circuits and line of symbolic machines

Development, over 10 years, of a symbolic processor family (maximum power: 1 gigalips) and of the associated software for multiple applications in avionics, astronics or in the field of large industrial production units.

- Generalized tools for expert-system applications development

Research and development of tools for the development of expert systems and expert-system models.

- Multilingual information system

Natural-language querying and updating of databases that may contain text, graphic, image and voice data, with data-entry and operation in several languages.

- Control and monitoring of major industrial processes

Development, by 1990, of aids to process control integrating diagnostics, projections, decision-making and action follow-up.

Electronic Components

- Europrocessor

Development of a high-end flexible microprocessor in submicronic technology for the next decade; it should lead to the introduction of a standard.

- 64-megabit memory

Progressive development of memories of up to 64 megabits by 1995, with possible applications to other electronic components.

- European GaAs-circuit plant

Industrial development of high-speed GaAs components for civil applications and completion of a pilot plant within 5 years.

- European custom-circuit plant

Creation of a European technique-validation plant to be used also as a higher-training tool.

Eureka
Theme: Euromatique
Project Sheet: Large Vector Computer

[A] Description

Nature

Development of a very high-power vector machine.

Specific Interest

This type of machine has become a must to achieve the numeric simulations required for complex-system design.

Spinoffs

- Acquisition of knowhow by the industrial teams working on the project (hardware and software);

- Technological spinoffs as far as the high-speed and integrated electronic components required to make the hardware are concerned;

- European dependence on the United States and Japan, which is now absolute, will be reduced.

Basic Technologies Involved

- Computer architectures;
- Microelectronics;
- Networks;
- Computer-aided design.

Working Schedule Contemplated

- Objective

Development of a machine with the following characteristics:
- Peak power: 30 Gflops (3.10^{10} floating-point operations per second);
- Memory: one 64-bit Gword;
- Technologies: . operators: ECL [emitter-coupled logic]
  . registers: GaAs
  . memories: MOS [metal-oxide semiconductor]
- High-level languages: Fortran, Ada, C, etc.
- Tools for running associated programs in parallel.

- Working schedule
  - 1986 Preliminary study
  - 1986-1988 Technological studies
  - 1987-1988 Study
  - 1989-1991 Development of two prototpyes; software
  - 1992 Integration.

Launching Procedure - Management

Launching of a preliminary feasibility study and of technological studies with competent organizations in 1986 (decision late in 1985).

Depending on the results of these preliminary studies, decision to continue the definition studies of the machine and its software in 1987 and 1988 (decision late in 1986).

Decision to start the development of two prototypes late in 1988 (time required: 3 years).

To manage the project, creation of a Managing Committee (one co-manager to be appointed in each country) assisted by a technical working group of representatives of government departments, manufacturers and users from the countries concerned.

Creation of an industrial and financial entity.

[B] Possible Partners in France

- Manufacturers

Main partner: Bull
Possible cooperation from: Thomson, SINTRA [Industrial Company for New Radioelectrical Technologies and French Electronics]

- Public Organizations

ONERA [National Office for Space Studies and Research], INRIA [National Institute of Data-Processing and Automation Research]

[C] Possible Partners in Europe

- FRG: Siemens, etc.

[D] Benefits Derived From European Cooperation

- Opening new markets

- Contributions from experts, in particular in architecture and technology.

Eureka
Theme: Euromatique
Project Sheet: Highly-Parallel Computer Architectures

[A] Description

Nature

- Study of highly-parallel architectures
- Development of a machine.

Specific Interest

Highly-parallel architectures are a way of developing the supercomputers of the 1990's. They should lead to moderate-cost high-performance systems.

Spinoffs

Acquisition of knowhow in the field of high-performance computer-system architectures.

Basic Technologies Involved

- Supercomputer architecture
- Microelectronics
- Networks

Working Schedule Contemplated

- Objective
Development of a machine exceeding 10 Gflops by 1992.

- Working schedule
The project consists of two stages:

Stage 1: Study of an architecture leading to the development of a demonstration machine (power: 100 Mflops) by 1988. The goal is to demonstrate that this type of architecture can provide high performance over a broad range of applications.

Stage 2: Development of a highly-parallel machine (power in excess of 10 Gflops) by 1992.

The following points will be studied:
- Design and emulation tools for parallel architectures;
- Hardware and software control mechanisms;
- Programming tools;
- Development of specific numeric algorithms;
- Parallel memories;
- Communications between processors;
- Processor design;
- Technology.

Launching Procedure - Management

- Study stage to start already at the end of 1985;
- Decision to start stage 2 (development) early in 1988;
- As far as project management is concerned, the committee and technical group set up as part of the "Large Vector Computer" project may also monitor the "Highly-Parallel Architectures" project.

[B] Possible Partners in France

- Manufacturers

Bull, Thomson/SINTRA, etc.

- Public Organizations

CNRS [National Center for Scientific Research], INRIA, ONERA, etc.

[C] Possible Partners in Europe

In the first "study" stage, the broadest participation of European organizations is desirable.

The INRIA and the GMD [expansion unknown] (FRG) are already cooperating on the subject. Their cooperation could form the core of a European team enlarged to include other partners (e.g. Great-Britain, Italy).

[D] Benefits Derived From European Cooperation

Contribution of foreign expertise, especially with respect to parallel algorithms and vectorization, and also computer architectures.

Eureka
Theme: Euromatique
Project Sheet: Synchronous-Architecture Multiprocessor Machine

[A] Description

Nature

Development of a synchronous-architecture multiprocessor machine.

Specific Interest

This type of machine is required for:
- numeric analysis;
- signal processing;
- image processing.

Spinoffs

- Acquisition of knowhow by the industrial and public organizations working on the project (hardware and software);

- Contribution to the development of high-integration HCMOS [expansion unknown] circuit technologies and assembly technologies that could be used in the data-processing sector as a whole;

- Competitiveness on the market of high-power low-cost scientific-application computers.

Basic Technologies Involved

- Computer architectures;
- Microelectronics;
- Networks;
- Computer-aided design.

Working Schedule Contemplated

- Objective

- Peak power of about 2,000 megaflops (2.10^9 floating-point operations over 32 bits; $1.10.^9$ over 64 bits), for the best performance ratio (overall dimensions, dissipation/power).
- Memory of 100 32-bit megawords;
- Technology: HCMOS or AsGa operators; MOS memory;
- High -level languages: Fortran, Ada, etc.;
- CAD tools.

- Working schedule

- Study of machine parallelism;
- VLSI technological development, especially in HCMOS, for:

- Interconnection network;
- High-speed memory-processor link;
- Processing units.

- Improved assembly technologies:
  - Packages with a large I/O number;
  - High-density printed circuits.

- Languages and translation chains with automatic extraction of parallelism.

Launching Procedure - Management

Preliminary study and technological studies with competent organizations to start in 1986 (decision late in 1985).

Depending on the results of these preliminary studies, decision to proceed with the definition of the machine and its software in 1987 and 1988.

Decision to start development of a prototype around mid-1988 (time required: 2 years).

To manage the project, constitution of a Management Committee (one co-manager appointed in each country) assisted by a technical working group of representatives of government departments, manufacturers and users from the countries concerned.

[B] Possible Partners in France

- Manufacturers

- main partner: SINTRA (Thomson group);
- with the cooperation of: Thomson-Semiconductors, etc.

- Public Organizations

INRIA/IRISA [Data-Processing and Random-Systems Research Institute] (study of parallel architectures, tranlators), LASSY [expansion unknown] (CNRS laboratory in Nice), etc.

[C] Possible Partners in Europe

- Manufacturers represented on the data-processing market and with advanced knowhow in VLSI design (HCMOS process) and high-integration assembly technologies (INMOS [expansion unknown], GEC [General Electricity Company], Siemens, etc.).

- Research organizations competent in the fields of parallel architectures, parallel languages and associated translators (GMD, etc.).

[D] Benefits Derived From European Cooperation

- Expansion of the technical base of the project and improved technological level;
- Possibility of broader marketing.

Eureka
Theme: Euromatique
Project Sheet: Mass Memory

[A] Description

Nature

Study and development of large magnetic disks and, subsequently, large optic disks and their controllers.

Specific Interest

New very-large-capacity storage methods representing one subsystem essential to the operation of medium or large-scale business and scientific computers.

Spinoffs

Development of a European industry to counterbalance the international U.S. monopoly.

Basic Technologies Involved

Mastery of numerous technologies:
- Precision engineering;
- Aerodynamics;
- Magnetics;
- Chemical metallurgy;
- Optics;
- Magneto-optics.

Working Schedule Contemplated

- Objective
Development of large-capacity storage means by 1990.

Launching Procedure - Management

Creation of an industrial and financial consortium.

[B] Possible Partners in France

- Manufacturers

Bull, etc.

- Public Organizations

LETI [Electronics and Data-Processing Technology Laboratory], etc.

[C] Possible Partners in Europe

- FRG: BASF [Baden Anilin and Soda Factory], Siemens, etc.

[D] Benefits Derived From European Cooperation

- Pooling resources no single manufacturer could gather.
- Pooling scattered capital concerning magnetics, disks, recordings, etc.

Eureka
Theme: Euromatique
Project Sheet: Software Engineering Center

[A] Description

Nature

Creation of a software engineering center.

Specific Interest

- Coordination of R&D in software engineering;
- Dissemination of research results;
- Collection and reduction of data on software development.

Spinoffs

- Preparation of utilization standards for software-engineering technologies.

Basic Technologies Involved

Software engineering:
- methods;
- techniques;
- tools;
- plants, etc.

Working Schedule Contemplated

- Objective
Setting up the center.

- Working schedule

- Identifying the Center's objectives, major research fields, implementation stages;
- Setting up the observatory [as published] in the very near future;
- Starting R&D work;
- Progressive standardization of methods, techniques, tools, languages, documentation interfaces, etc.
- Collecting data from manufacturers;
- Developing corresponding means of analysis.

[B] Possible Partners in France

- Manufacturers

Aerospatiale, Bull, Cap Gemini, Renault, SSII [software engineering companies], etc.

- Public Organizations

INRIA, Saint-Etienne School of Mines, etc.

[C] Possible Partners in Europe

- Great-Britain: ICL [International Computer Limited], Logica, Scicon, etc.
- Netherlands: Philips, etc.
- FRG: AEG [General Electric Company], Dornier, MBB, Siemens, Aachen University, etc.

[D] Benefits Derived From European Cooperation

In time, use of similar and compatible methods and tools.

Eureka
Theme: Euromatique - Artificial Intelligence

Artificial intelligence is a relatively broad field, of a horizontal nature at applications level. Three complementary aspects, at various levels, are required if artificial intelligence is to be used efficiently in the future.

- Material level:
Symbolic machines and processors;

- Basic software level:
Software environment for symbolic data-processing;

- Application level:
Software tools oriented to expert-system generation and utilization.

Four specific sheets define specific fields of action:

- Dedicated circuits and line of symbolic machines;
- Comprehensive tools for the development of expert-system applications;
- Multilingual data-processing system;
- Control and monitoring of major industrial processes.

Generally speaking, the operators concerned might be the following:

- In France:

- Manufacturers

AMAIA [expansion unknown], Bull, CGE, CGEE [General Association of Electrical Companies]-Alsthom, Cognitec, Copernique, ESD [Serge-Dassault Electronics], Framentec, TITN [New Technologies Data Processing], etc.

- Public Organizations

CEA [Atomic Energy Commission], Cesia, CNET [National Center for Telecommunications Studies], EDF [French Electricity Company], IEF [Basic Electronics Institute], LRI [expansion unknown], Paris-7 University.

- In Europe

- Great-Britain: ICL, INMOS [expansion unknown], LPA [expansion unknown], SDL [expansion unknown], etc.
- Italy: Olivetti, etc.
- Norway: Norsk Data, etc.
- Netherlands, Philips, Amsterdam University, etc.
- FRG: GMD [expansion unknown], Krupp, Siemens, etc.

Eureka
Theme: Euromatique
Project Sheet: Dedicated Circuits and Lines of Symbolic Machines

[A] Description

Nature

Development of a family of symbolic processors and associated software to support and integrate major artificial-intelligence applications: expert systems, knowledge bases, form recognition, etc.

Specific Interest

- Providing more power to the hardware;
- Integrating hardware into a complex real universe where it is necesary and important that it should be placed.

Spinoffs

Multiple applications in avionics, in the space field and for large manufacturing units.

Basic Technologies Involved

- Study of the hardware architecture of symbolic processors;

- Study of creation techniques for basic artificial-intelligence languages: Lisp, Prolog and object-oriented languages;

- Study of the integration of more traditional concepts into these languages: system, real time, database.

Working Schedule Contemplated

- Objective
The ultimate objective is the Gigalips.

- Working schedule

Stage 1:
- Integration of the various software concepts andtheir extensions on parallel and distributed aspects;
- Construction of adequate hardware using existing components.

Stage 2 - Using basic software components:
- Study and construction of new symbolic machines;
- Full integration into advanced applications.

[B] Possible Partners in France.

- Manufacturers

AMAIA, Bull, CGE, CGEE-Alsthom, Copernique, MATRA, TITN, Thomson, etc.

- Public Organizations

CNET, IEF (Basic Electronics Institute), etc.

[C] Possible Partners in Europe

- Great-Britain: INMOS, etc.
- Norway: Norsk Data, etc.
- FRG: Siemens, etc.

[D] Benefits Derived From European Cooperation

Integrating developments now scattered among various European research centers (MAIA [expansion unknown], INMOS transputer, etc.).

Eureka
Theme: Euromatique
Project Sheet: Generalized Tools for the Development of Expert-System Applications

[A] Description

Nature

Development of a set of tools to develop expert systems.

Specific Interest

Making the expert-system technique available to European manufacturers in the near future.

Spinoffs

Multiple spinoffs in all industrial sectors.

Basic Technologies Involved

- Basic languages;
- Higher-level languages;
- Reproduction of reasoning, knowledge and learning;
- Man/machine interaction.

Working Schedule Contemplated

- Objective

Development of two sets of tools:
- Tools for the development of expert systems;
- Tools for the development of expert-system models.

- Working schedule

- Study and development of tools to develop operational expert systems using well-established representation and inference techniques (stressing portability, opening to the outside world and performance);

- Study and development of tools to develop system models (stressing power of expression rather than performance).

Two stages:
Stage 1: specification and validation through models;
Stage 2: tool development.

[B] Possible Partners in France

- Manufacturers

Bull, CGE, Cognitec, ESD, Framentec, etc.

- Public Organizations

LRI (Orsay), Paris-7 University, etc.

[C] Possible Partners in Europe

- Great-Britain: ICL, LPA [expansion unknown], SDL, etc.
- Italy: Techint, TXT [expansion unknown], etc.
- Netherlands: Amsterdam University, etc.
- FRG: Danet, Siemens, etc.

[D] Benefits Derived From European Cooperation

Integration of scattered developments in the various European research centers.

Eureka
Theme: Euromatique
Project Sheet: Multinlingual Information System

[A] Description

Nature

Natural-language querying and updating of comprehensive databases, i.e. databases that could contain text, graphics, images and possibly voice data.

Specific Interest

Entry and operation possible in various languages.

Spinoffs

Possibility of adding aids to translation.

Basic Technologies Involved

- Logic programming;
- Knowledge bases;
- Architecture;
- Man/machine interaction.

Working Schedule Contemplated

- Objective
Development of the system within 10 years.

- Working schedule

Representation of comprehensive electronic documents taking into account the logic and material structure of a document as well as its semantic content;

Comprehension of national languages and definition of a single European-language interface for document representation;

Man/machine interface at an individual work station to create, edit and alter electronic documents;

System for the acquisition and semantic analysis of "paper" documents prior to their entry into the world of electronic documents;

High-performance archival station provided with a database-management system suitable for storage and filing, for electronic-document querying (parallel-

architecture station including data-processing symbolic operators, screening operators, and accelerators of access to data stored in secondary memory);

Communication architectures and communication protocols between work stations and servers interconnected by a local-area or a long-distance network;

Aids to automatic translation, supported by the document database.

Launching Procedure - Management

Association of artificial-intelligence experts, manufacturers, service companies and pilot users.

[B] Possible Partners in France

- Manufacturers

Bull, CGE, etc.

- Public Organizations

INRIA, etc.

[C] Possible Partners in Europe

- Great-Britain: ICL, etc.
- FRG: GMD, Siemens, etc.

[D] Benefits Derived From European Cooperation

Rationalization, rapprochement and efficiency factor; cooperation in this field is self-evident.

Eureka
Theme: Euromatique
Project Sheet: Control and Monitoring of Major Industrial Processes

[A] Description

Nature

Study and develoment of tools making it possible to build control-aid systems integrating diagnostic, projections, decision-making and intervention follow-up in the field of industrial processes.

Specific Interest
Crucial application for economic and safety problems.

Spinoffs

Numerous industrial applications:
- Search for complex optimization compromises (quality, energy economy, etc.);

- Search for complex scheduling compromises;
- Diagnostic and emergency repair of the process or electronic equipment;
- Operator training.

Of interest to all large project owners and prime contractors.

Basic Technologies Involved

- Knowledge-representation techniques (formalism derived from logic, models, simulation, plans, etc.);
- Expert systems;
- Symbolic arrays;
- Ergonomics.

Working Schedule Contemplated

- Objective
Specification, then experimental implementation in one sector.

- Working schedule

- Study of time-representation techniques;
- Study of techniques for the qualitative representation of physical phenomena;
- Study and development of drawing generation and execution systems;
- Integration of the latest progress achieved in the field of expert systems;
- Development of evolutive hardware tools and their interfaces;
- Study of the man/machine interface;
- Implementation of deductive or associative-access databases;
- Consideration of implementation procedures.

[B] Possible Partners in France

- Manufacturers

Aerospatiale, CGE, etc.

- Public Organizations

CEA, CNES, EDF, etc.

[C] Possible Partners in Europe

- Netherlands: Philips, etc.
- FRG: Krupp, MBB, Siemens, etc.

[D] Benefits Derived From European Cooperation

Pooling study resources and broadening the potential market.

Eureka
Theme: Euromatique
Project Sheet: Europrocessor

[A] Description

MERCURE: European Microprocessor with Error-Proof Universal Connection Network

Nature

Study and development of a high-end flexible microprocessor in submicronic technology, for the next decade.

Specific Interest

Develoment of high-end microprocessors whose design and develoment will power advanced developments in the integrated-circuit and image-processing industry, a field in which the United States have a de facto monopoly. This new-generation processor is suitable for parallel processing

Spinoffs

- Development of a European integrated-circuit industry;
- Multiple applications in most large electronic and data-processing equipment;
- Major driving effect on the data-processing, electronic and telecommunications industries.

Basic Technologies Involved

- Micronic and submicronic technology (10^6 transistors per chip);
- Object-oriented parallel architecture;
- Software engineering.

Working Schedule Contemplated

- Objective
Development of the microprocessor by 1990.

- Working schedule

Development of the technology concerned:
- Performance definition;
- Definition of silicon-components;
- Definition of software tools;
- Pilot applications.

Software
- Core;
- Software-engineering workshop;
- Compilers.

Tests
- Validation with a scanning microscope;
- Production tests;
- Internal tests.

Complex-machine architecture
- Multiprocessor;
- Tolerance to failure;
- Distributed addressing;
- Data consistency.

Launching Procedure - Management

- Manufacturers' agreement on joint development, including a strategy leading to its adoption as a standard.

[B] Possible Partners in France

- Manufacturers

Thomson, etc.

- Public Organizations

CEA/LETI, CNET, etc.

[C] Possible Partners in Europe

- Great-Britain: GEC, INMOS, Plessey, etc.
- Netherlands: Philips, etc.
- FRG: Siemens, etc.

[D] Benefits Derived From European Cooperation

Cooperation is necessary to adopt a new standard; it is the only way to gather the resources required for a program of such a scope.

Eureka
Theme: Euromatique
Project Sheet: 64-Megabit Memory

[A] Description

Nature

Development of a 64-megabit dynamic RAM memory.

Specific Interest

Setting an ambitious objective to mobilize operators, and making intermediate stages possible.

Spinoffs

- Development of a European dynamic-RAM industry;
- Helping European industry catch up;
- Mastering a technology applicable to components other than memories.

Basic Technologies Involved

- Research on machines and basic technology;
- Research on memory point structure;
- Research on memory organization.

Working Schedule Contemplated

- Objective
Development of a 64-megabit memory by 1995.

- Working schedule

- Progressive development of components with increasing performance characteristics;
- Study of critical equipment for these structures of a size below 0.5 micron (lithography, scouring, automatic marking, white room);
- Technology and design of 3-D cells;
- Development of any non-available equipment;
- Construction of a pilot line.

Launching Procedure - Management

Constitution of a manufacturers' consortium.

[B] Possible Partners in France

- Manufacturers

Thomson, etc.

- Public Organizations

CEA/LETI, CNET, etc.

[C] Possible Partners in Europe

- Great-Britain: GEC, etc.
- Netherlands: Philips, etc.
- FRG: Siemens, etc.

[D] Benefits Derived From European Cooperation

Intensification of French participation in already existing projects between European manufacturers (Siemens and Philips' development program for 4-megabit memories).

Eureka
Theme: Euromatique
Project Sheet: European GaAs Circuit Plant

[A] Description

Nature

To achieve progress in high-speed component technologies, in particular GaAs components (e.g. pilot unit, foundry, etc.).

Specific Interest

- Transforming the high level achieved by European research on high-speed GaAs digital circuits into an industrial activity;

- Forming partnerships among European manufacturers in order to minimize the heavy initial investments required to acquire a strong position on a still weak international market within the next 3 to 4 years.

Spinoffs

In addition to military applications, the market for this type of civil-application components is likely to expand considerably if prices are considerably reduced:

- High-end data-processing equipment and supercomputers;
- Equipment related to control, maintenance, management and storage (energy).

Basic Technologies Involved

- TEGFET [two-dimensional electron-gas field-effect transistor] DCFL [expansion unknown] circuits;
- Three times faster than silicon for an equal consumption;
- 10,000 to 20,000 gates per chip;
- Applications:
  - Cache memory;
  - Arithmetic and logic units;
  - Signal processing;
  - High-speed random logic.

Working Schedule Contemplated

- Objective
Industrialization of European research in the sector.

- Working schedule

Construction of a European pilot plant;

Developments (carried out synergistically with silicon activities):
- Computer-aided design;
- Development of standard cells;
- Materials (zero defect);
- Packaging;

Looking for an agreement with one or several U.S. companies to gain access to the U.S. market.

Launching Procedure - Management

Creation of a European industrial consortium and of a European industrial program-management "entity."

[B] Possible Partners in France

- Manufacturers

Crismatec, MATRA, Thomson, etc.

- Public Organizations

CNET, CNRS, etc.

[C] Possible Partners in Europe

- Great-Britain: GEC, Plessey, STC, etc.
- Netherlands: Philips (LEP [Electronics and Applied Physics Laboratories] etc.
- FRG: Siemens, etc.
- Sweden: LME, etc.

[D] Benefits Derived From European Cooperation

Concerted research on all existing processes:

- coordination of efforts;
- reduction of R&D costs.

Eureka
Theme: Euromatique
Project Sheet: European "Custom" Circuit Plant

[A] Description

Nature

Development of the (proven and "mixed") technologies involved in a joint prototype plant.

Specific Interest

Development of techniques to design, produce and test complex signal-processing digital circuits much faster than it is possible today.

Spinoffs

Associating a higher training center to this plant, which will use the same equipment.

Basic Technologies Involved

Two approaches:
- 1.2-micron CMOS-type technologies;
- Compatible CMOS-bipolar type technologies.

Working Schedule Contemplated

- Objective
Rapid development of studies, then full-scale analysis.

- Working schedule

Studies to be undertaken:
- Simulation and modelling;
- Creation of a European library of micro and macrocells;
- Development of routing and interconnection software and of associated test-definition software;
- Assembly and interconnection methods;
- Testing means.

Means to be used :
- Creation of a joint European prototype plant, first using proven technologies to validate the techniques, and then a mixed technology well suited to this type of application.

Launching Procedure - Management

Creation of a professional technical center.

[B] Possible Partners in France

- Manufacturers

MATRA, Thomson, etc.

- Public Organizations

CNET, LETI, etc.

[C] Possible Partners in Europe

- Great-Britain: GEC, Plessey, etc.
- Netherlands: Philips;
- FRG: MBB, Siemens, etc.
- Sweden: LME.

[D] Benefits Derived From European Cooperation

Multiplicity of partners within a "professional center."

[II] Eurobot: Third-Generation Robotics, Automated Factory/Computer-Aided Design and Manufacturing, Lasers

- Civil-security robots
- Agricultural robots
- Automated factory/computer-aided design and manufacturing (CAD/CAM)
- CO_2, CO, excimer and free-electron lasers

Third-Generation Robotics

- Civil security robots

Development of self-controlled modular civil-security robots to replace man in high-risk jobs or jobs that cannot done by man.

- Agricultural robots

Development of a fully-automated programmable tractor that would increase the efficiency and value of agricultural work.

Automated Factory-CAD/CAM

- Highly-integrated automated and flexible manufacturing plant

Development of a plant which, in an industrial context, would integrate the product-design, management, production, manufacturing, administration and sales functions and would produce marketable goods, with a view to solving the technical, organizational and human problems not yet fully under control today.

CO_2, CO, Excimer and Free-Electron Lasers

Research and development of high-yield, high-power, high-penetration and/or high-collimation power-lasers for applications in industrial machining and assembly.

Eureka
Theme: Eurobot - Third-Generation Robotics

To develop third-generation robotics in Europe by means of a number of goal-oriented subprograms, each of which would be headed by a manufacturer, and

which would associate manufacturers, research centers and universities in European consortia.

- Robots to operate in the nuclear industry
- Civil-security robots
- Mining robots
- Robots for ocean environments
- Agricultural robots
- Industrial-cleaning robots
- Robots for civil engineering and construction
- Household robots

Three projects from this list could be implemented by priority:

- Civil-security robots
- Agricultural robots; and possibly
- Robots for ocean environments.

Generally speaking, the operators could be the following:

- In France:

- Manufacturers: Bull, CGE, Dassault, Renault, SAGEM [Company for General Applications of Electricity and Mechanics], SIETAM [expansion unknown], Thomson, etc.

- Laboratories: CEA, CNES [National Center for Space Studies], IFREMER [French Institute for Research on Ocean Development], IIRIAM [Marseilles International Institute for Robotics and Artificial Intelligence], LAAS [Automation and Systems Analysis Laboratory], LETI, etc.

- In Europe:

- Belgium: FN [Herstal National Factory], etc.
- Great-Britain: GEC, Lamberton, Meta Machines, Taylor Hitec, etc.
- Italy: Ansaldo, Comau, Elsag, Mectron (STET [Telephone Finance Corporation]), Olivetti, RSE [expansion unknown], etc.
- FRG: Fels, Fibro, Kuka, Siemens, etc.
- Sweden: ASEA [Swedish General Electric Corporation], etc.

Eureka
Theme: Eurobot
Project Sheet: Civil-Security Robots

[A] Description

Nature

Development of modular civil-security robots to meet the following fonctional requirements:

- Autonomy of movement

- Autonomy of decision
- Action on the environment
- User-friendly man/machine interface
- Cooperation and coordination.

The modular approach adopted makes it possible to contemplate designing and developing a line of robots that could operate in the following environments:

- Environments presenting natural hazards
- Environments presenting man-made hazards

to carry out the following tasks:

- Mine removal
- Fire-fighting
- Natural disasters, earthquakes
- Pollution control
- Monitoring
- Operations in radioactive, chemical and high-temperature environments.

Robots could replace man in high-risk tasks or tasks that man cannot carry out himself. They will thus preserve and save human lives.

Specific Interest

The emphasis placed on the modular design of robots will make it possible, on the one hand, to intensify appreciably the efforts undertaken in the generic technologies required for third-generation robotics and, on the other hand, to integrate these technologies into subsystems or modules suitable for the functions required in the environment considered.

With the modular approach, we can both develop generic R&D and have goal-oriented projects.

Spinoffs

In addition to scientific and technological spinoffs, there will be a considerable and rapid contribution to industrial robotics and to computer-integrated manufacturing.

Actually, any research we start must make it possible to design new robot architectures, to use new materials (gains of weight, speed, precision, cost, etc.), to improve man/machine interfaces, to increase decision autonomy (adaptation to environmental changes), etc., and possibly to experiment with cooperation among several robots, either to carry out a set of production tasks or for maintenance operations.

Without waiting for the development of applied robots for specific sectors, the technologies developed could be transferred to industrial robotics progressively as they are developed.

Basic Technologies Involved

As far as R&D is concerned, the development of such machines supposes that the following problems have been brought under control:

- Autonomy of self-standing on-board energy:
  - Lightweight materials
  - Locomotion
  - Navigation/guidance
- Autonomy of decision:
  - Sensors
  - Expert systems to generate drawings, artificial intelligence
- Action on the environment:
  - Arms
  - Operating organs ["effectueurs"]
  - Actuators
- Cooperation/coordination:
  - Communication networks between robots
  - Interfaces
  - Telepresence [as published]
- Resistance to the environment.

Working Schedule Contemplated

- Objective

- Creation of European workshops on themes that should be:
  - Goal oriented
  - Transversal: signal processing, navigation, energy storage, materials, micromechanics, ad-hoc hardening of technologies to reflect their specific applications, etc.;
- Contributions to the definition of European standards and compatibility rules;
- Creation of European experimentation and evaluation sites.

- Working schedule

5 stages:
1. Product and module definition;
2. Definition and implementation of R&D programs;
3. R&D evaluation as a function of defined products and modules;
4. Module integration, completion and testing;
5. Robot integration, completion and testing.

Launching Procedure - Management

Appointment of a project leader (agency created for a temporary period and supported by national relays, with respect to R&D as well as industrialization and marketing) to prepare, issue and study calls for bids, to appoint prime contractors (consortia of firms) and subcontractors, and to follow up and control the delivery of studies and the overall project financing.

[B] Possible Partners in France

- Manufacturers

CAMIVA [Associated Manufacturers of Fire-Fighting, Refuse-Collection and Aviation Equipment], G3S [expansion unknown], GIAT [expansion unknown], Hispano-Suiza, Technicatome, etc.

- Public Organizations

ADI [Data-Processing Agency], CEA, CEA/OREP [expansion unknown] CERT [Toulouse Study and Research Center], CESTA [Aquitaine Scientific and Technical Study Center], CNRS, INRIA, associated laboratories, etc.

[C] Possible Partners in Europe

- Great-Britain: Taylor Mitec, etc.
- Italy: FIAR [expansion unknown], Mectron, etc.

[D] Benefits Derived From European Cooperation

- Project requiring the mobilization of R&D capacities outside of the national context;
- Creation of a European supply on an expanding market;
- Encouraging the recovery of European supply in robotics and computer-integrated manufacturing.

Indeed, although the above-mentioned R&D orientations are clearly identified and are covered by current research projects, the scope of the goals set goes well beyond national R&D capacities; therefore, launching such a project at European level will make it possible to coordinate, or even to federate national R&D efforts in third-generation robotics and to accelerate their completion. In addition, a goal-oriented project will make it possible to ascertain European manufacturers' interest in, and commitment to taking position on a developing market already penetrated by the Americans and the Japanese.

Eureka
Theme: Eurobot
Project Sheet: Agricultural Robots (Automatic Tractor)

[A] Description

Nature

Development of a fully-automated programmable tractor meeting the following functional requirements:

- Autonomy of movement in unimproved environment;
- Autonomy of decision;
- Autonomy on the environment (plantation, crop, etc.);
- User-friendly man/machine interface.

These machines will have to be able to move about on any kind of terrain and in contact with living organisms (plants, animals) under highly variable temperature, humidity and light conditions and in the presence of dust and vibrations.

Specific Interest

- Improving the efficiency and value of agricultural work, making tasks less tedious. Possibility of working on hard-to-cultivate land.

- Bringing various research fields to interact in order to develop a tractor that will operate in unimproved natural environments.

Spinoffs

- Economic: avoiding crop losses as a result of bad weather;
- Social: restoring value to agricultural work.

Basic Technologies Involved

The problems are threefold:

- Mechanical: driving on all terrains, variety of tools, platform stability, etc.;
- Sensors: optical, thermal, mechanical, position sensors;
- Data-processing: the data-processing capabilities of these robots will have to integrate the latest results of artificial-intelligence research.

Working Schedule Contemplated

- Objective

- Creation of European workshops on themes that are:
    - goal oriented;
    - transversal: signal processing, navigation, energy storage, micromechanics, ad-hoc hardening of technologies corresponding to their specific applications, etc.
- Contribution to the definition of European standards and compatibility rules;
- Creation of European experimentation and evaluation sites.

- Working schedule:

5 stages:
1. Product and module definition;
2. Definition and implementation of R&D programs;
3. Evaluation of R&D as a function of defined products and modules;
4. Module integration, completion and testing;
5. Machine integration, completion and testing.

[B] Possible Partners in France

- Manufacturers

Renault, etc.

- Public Organizations

- ADI, Cemagref, CNRS, INRIA, etc.

[C] Possible Partners in Europe

- Italy: Fiat, etc.
- Sweden: Saab, etc.

[D] Benefits Derived From European Cooperation

Rapidity of implementation, pooling of multiple competence.

Eureka
Theme: Eurobot
Project Sheet: Highly-Integrated Automated and Flexible ManufacturingPlant - CAD/CAM

[A] Description

Nature

Development of an automated and flexible plant in an industrial context and through advanced data-processing and robotics systems, to provide integrated functions of product design, production management, manufacturing as well as administration and marketing (CAD, CAM, computer-aided production management, CAX [computer-aided X], etc.

This plant will have to produce marketable goods. The line of goods produced would meet one of the four following criteria:

- Goods for which the European industry is not represented;
- Goods having humanitarian functions (Third-World markets, equipment for the handicapped);
- Goods currently produced by European consortia;
- Prototypes (under certain conditions to be defined)>

Other types of goods can of course be contemplated (components manufactured in white rooms).

Among the various manufacturing processes, assembly/installation will receive special attention. In addition, the project shall have to rely not only on technical, but also on socioeconomic and organizational knowledge.

Specific Interest

Development of an operational unit implying that a solution is found to technical, organizational and human problems not yet fully solved today:

- Development of advanced-design components and subsystems:
    - Distributed and heterogeneous data processing;
    - Industrial local-area networks;
    - Robotized assembly cells;
    - Software for real-time management of production, for quality and maintenance management;
    - Distributed CAD, CAX systems;
    - Man/machine communication interfaces.

- Expertise in communication methods and techniques with reference to integration and man/machine relations:
    - Reference models (factory, factory environment, etc);
    - Communication protocols.

Spinoffs

- Scientific spinoffs
    - Real-time data processing;
    - Artificial-intelligence techniques and expert systems;
    - Optic communication systems, etc.

- Economic spinoffs:
    - Restructuring the demand to optimize the equipment lines offered and their manufacturing conditions, etc.

- Human spinoffs:
    - Design and implementation of innovative management methods with respect to organization and to operators' training and hiring, etc.

Basic Technologies Involved

- Artificial intelligence;
- Microelectronics;
- Optronics;
- Telecommunications: networks.

Working Schedule Contemplated

- Objective
The goal is not to design and implement a factory without workers, but a factory where all technical, organizational and human components are taken into account simultaneously.

- Working schedule
Four stages are contemplated:
1. Study and specifications;
2. Development and implementation;

3. Testing and evaluation;
4. Demonstration, training and production.

Launching Procedure - Management

Appointment of a project leader (agency created for a temporary period) to prepare, issue and study calls for bids, to appoint prime contractor (consortia of firms) and subcontractors, and to follow up and control the delivery of studies and the overall project financing.

The project leader will pilot the above-mentioned Stages 3 and 4. For stage 4, depending on the nature of the goods produced, marketing/distribution procedures remain to be defined.

[B] Possible Partners in France

- Manufacturers

Aerospatiale, Industrial Automation, CGE, MATRA, Peugeot, Renault Automation, SGN [General Company for New Technologies], Sodeteg Tai, etc.

- Public Organizations

ADEPA [Agency for the Development of Automated Production], ADI, CEA, CERT, CESTA, CNRS, INRIA, associated laboratories, etc.

[C] Possible Partners in Europe

- Great-Britain: GEC, etc.
- Italy: FIAR [expansion unknown], Fiat, Olivetti-Osai, RSE (STET group), etc.
- FRG: Siemens, etc.
- Sweden: ASEA, etc.

[D] Benefits Derived From European Cooperation

- Implementation of research carried out under Community programs: BRITE [Basic Research on Industrial Technologies for Europe], ESPRIT [European Strategic Program for R&D in Information Technology] (project finalization);

- Will amount to a European proposal for standardization of computer-integrated manufacturing [CIM];

- Structuring CIM at European level.

Eureka
Theme: Eurobot
Project Sheet: CO_2, CO, Excimer and Free-Electron Lasers

[A] Description

Nature

Study and development of high-yield, high-power, high-penetration and/or high-collimation power lasers.

Specific Interest and Spinoffs

Preparing the tools of the future integrated factory.

Basic Technologies Involved

- Plasma physics;
- Vacuum physics;
- Power follow-up control;
- Power electronics, servo-mirrors.

Working Schedule

1. CO_2 Laser

- Development of operational CIM tools: continuous lasers (10 microns) with a power in excess of 50 KW;
- Making a European tool available to major specialized laboratories;
- Development of an industrial source.

2. CO Laser

- Research and development of CO lasers continuous at room temperature, of average power (of the order of 5 KW) and with yields in excess of 20 percent (5.2 to 5.5 microns).
- First stage: power of a few tens of watts for communications, surgery.
- Second stage: power of a few watts for machining.

3. UV Lasers

- Research and development of high-power (1 kW and over) excimer lasers. Definition of a line of tools for treatment and machining;
- Research and development of excimer lasers (KeF, XeF) of a few joules, for micro-machining.

4. Free-Electron Laser

- Research on the potential of free-electron lasers. Development of prototypes of a few kilowatts.

Launching Procedure - Management

Consortium of European partners for each of the operations selected.

[B] Possible Partners in France

- CO_2 Alsthom, CGP [General CIM Company], CILAS [Laser Industrial Company], ETCA [Central Technical Establishment for Armament], FRAMATOME [Franco-American Atomic Construction Company], GIAT, MATRA, SGN, etc.
- CO: CILAS, etc.
- UV: CERCO [expansion unknown], CILAS, CIT [Industrial Telecommunications Company], CNET, ETCA, IMFM [expansion unknown], LDM [expansion unknown], LETI, Micro-Controle, SOPRA [expansion unknown], Thomson, Usinor, etc.
- Free-electron: CEA, etc.

[C] Possible Partners in Europe

CO_2:

- Belgium: CBL [expansion unknown], etc.
- Great-Britain: Ferranti, etc.
- Norway: Dama, Nurks, etc.
- FRG: Rofins Union, etc.

CO:

- Great-Britain: Ferranti, RSBE [expansion unknown], etc.
- FRG: DFVLR [German Research and Development Institute for Air and Space Travel), MBB, etc.

UV:

- Great-Britain: AWRE [expansion unknown], JK Lasers, etc.
- FRG: Garching, MBB-Lasau, etc.

[D] Benefits Derived From European Cooperation

- CO_2: sharing expenditures and markets;
- Others: expenditure-sharing and optimum use of resources, in particular human resources.

Appendix

CO_2-Laser CIM

The carbon-dioxide power laser is a tool which can be used on a wide range of materials: metals, alloys, ceramics, etc., and which can fulfill many functions: machining, welding, treatment, etc.

Possessing many qualities, it makes it possible to operate at very high speeds and is suitable for automation. In addition to the development of laser sources whose power would range from 1 kW to a few tens of kW, laser CIM

requires considerable progress of optical components, sensors and the control/command methods of processes whose basic physical mechanisms often still remains to be clarified. The robotization of laser processes will call for the design of original robots with large-dimension hollow axes, and above all for a thorough revision of present production methods, as laser CIM will make it possible to finish products (car frames, airframes, etc.) after the blanks have been assembled.

Continuous Carbon-Oxide Laser

The project consists in studying the possibilities of making continuous CO lasers operating in the neighborhood of room teperature. In a first stage, the project will consider small-size continuous lasers whose power will be limited to a few tens of watts. The main applications contemplated are long-distance communications and the medical field (surgery). The major advantage of CO laser, in addition to its yield which generally exceeds 20 percent, is its spectral emission range (5.2 to 5.5 microns) which makes it possible to transport beams through minimal-loss low-dispersion optical fibers (fluorinated glass). In a second stage, the project will consider the possibility of developing an industrial CO laser (power of a few kW) and the problems posed by the transport of a high-power beam through an optical fiber.

UV-Laser Micromachining

The development of excimer-type ultraviolet lasers is opening new prospects in the field of micromachining by very-high-resolution photochemistry. The energy of UV photons can be used for gravure, photodeposition or photopolymerization of a great many materials used in microphyusics, and in particular in microelectronics. The program may bear on the development of gas-phase or liquid-phase micromachining processes. Simultaneously, the study would bear on the development of various KeF or XeF excimer laser components possessing great homogeneity over an eight-inch section, reliable and with good power stability (10 joules per pulse at a few Hertz):

- optics: of lithographic-quality focusing, and displacement mechanics [as published] of very high precision;
- devices: optics for real-time position measurement with 0.1 micron;
- diagnostic: real time of gravure or deposition kinetics;
- formulation: of resins suitable for UV photo-ablation or photo-polymerization.

Surface Treatments Using High-Power UV Lasers

For machining and for the surface treatment of metallic and especially organic materials, pulsed excimer lasers offer possibilities that have hardly begun to be explored. One of the most outstanding results, photo-ablation in plastics or organic materials (bone, cartilage, teeth, cornea, etc.) is especially interesting because of the small extension or complete lack of thermally affected zone. The LSA (laser-supported absorption) conditions that have been shown to exist in metals will lead to new possibilities to obtain an amorphous surface and/or achieve impact hardening (placing the material in a pre-

stressed condition). The progress of this research will require the development of a testing device built around an excimer laser of medium high power (1 kW) and high repetition rate (about 1 kHz) based, for reasons of reliability, on the technique of discharge photo-triggered through pre-ionization.

[III] Eurocom: Research Networks, Wideband Network Equipment

- Data-processing networks for research
- Large European digital switch
- Wideband data-processing and automated office communications
- Wideband transmission

Data-Processing Networks for Research

Project aimed at promoting the development of data-processing networks for research and their interconnection between European countries, as an efficient joint system of information management is a prerequisite for European technological development.

Large European Digital Switch

Research and development of a public automatic switch for the future wideband digital network.

Wideband Data Processing and Automated Office Communications

Development of the equipment intended for users of the future wideband digital network.

Wideband Transmission

Research and development of long-distance transmission means for the future wideband digital network: fiber optics, satellite payloads.

Eureka
Theme: Eurocom
Project Sheet: Data-Processing Networks for Research

[A] Description

Nature

Creation of data-processing networks connecting the various operators and users of research at European level.

Specific Interest

The level of expertise in data-processing technology conditions the rate of progress of sciences and technologies; it provides indispensable supports to training, scientific exchanges and the storage of data and methods.

Spinoffs

The communication networks established in the world or research play a leading role in the development of new products and in the promotion of original methods; as a result, they have a driving effect on the industry and on the economy.

Basic Technologies Involved

Materials: transmission supports (satellites, optical fibers), general-purpose or specialized machines in large serving centers, storage means, "work stations," specialized (speech, text, image) terminals.

Creation of associated software, definition of standards or development of bridges.

Working Schedule Contemplated

- Objective

Coordinating and connecting communication systems used for research in various countries, with respect to the following:

- data processing:
Interactivity with non-specialization of terminals, virtual terminal;
Remote-submission of work;
File transfer;
Graphics.

- data communications:
Videotex;
Teletex;
Telefax.

- office automation:
Word processing;
Messaging: data; text.

- computerized conferencing (Forum).

- Working schedule

Promoting the development of data-processing networks for research in all European countries. Providing national-network interconnection under the best possible conditions.

Launching Procedure - Management

Definition, by the countries concerned, of a cooperation structure to ensure the development and interconnection of national systems.

[B] Possible Partners in France

- Manufacturers

Bull, etc.

- Public Organizations

MRT [Ministry of Research and Technology], CNRS, INRIA, etc.

[C] Possible Partners in Europe

Research centers and national data-processing networks.

[D] Benefits Derived From European Cooperation

The continued implementation of data-processing networks for research and their interconnection on a European scale is a prerequisite to the technological expansion of Europe. Active cooperation, leading to a measure of joint network management and promoted to the largest possible extent, will accelerate network implementation and facilitate their interconnection.

Eureka
Theme: Eurocom
Project Sheet: Large European Digital Switch

[A] Description

Nature

Development of an ISDN (integrated services digital network) switch of large capacity (over 100,000 lines) and wide band (64 kbit/s to 8 Mbit/s, with a throughput rate that could reach 34 or even 140 Mbit/s).

Specific Interest

To provide Europe with a major piece of equipment controlling the development of an all-digital wideband network.

Spinoffs

Development of the network, peripherals, terminals, services.

Basic Technologies Involved

- Research on architectures;
- Programming language;
- Specific components;
- Wideband connection matrix;
- Real-time software for communications processing, for operations and man-machine relations.

Working Schedule Contemplated

- Creation of a European consortium;
- Definition of specifications;
- Research and development;
- Equipment installation.

[B] Possible Partners in France

- Manufacturers

CIT-Alcatel, component manufacturers, etc.

- Public Organizations

DGT [General Directorate of Telecommunications], CNET, ETC.

[C] Possible Partners in Europe

- Great-Britain: Plessey, etc.
- Italy: Italtel, etc.
- FRG: Siemens, etc.

[D] Benefits Derived From European Cooperation

- Sharing expenditures;
- Opening public markets at European level;
- Standardization of European equipment.

Eureka
Theme: Eurocom
Project Sheet: Data Processing and Wideband Automated Office Communications

[A] Description

Nature

Development of equipment for the wideband ISDN to transport all information-distribution services, including videocommunications.

Specific Interest

Development of telecommunication systems which, while offering the "voice, data, fixed images" services of the "narrow-band" ISDN currently being set up, will allow general use of the interactive "high-quality moving images" service (video channel) for professional and industrial as well as for consumer applications.

Spinoffs

Development of the equipment-manufacturing industry and of services.

Basic Technologies Involved

- Research on architecture;
- Programming languages;
- Electronic components;
- Wideband and very-wideband connection matrix;
- Real-time software for communications processing, for operation and for man-machine relations;
- Very-high throughput bus;
- Archiving on digital optical disk;
- Confidentiality systems.

Working Schedule Contemplated

- Specification of standards;

- Development of small-capacity multiservice switches (essentially PABX [private automatic branch exchanges]) with very wide band (64 kbit/s to 34 Mbit/s and 140 Mbits/s);

- Development of consumer-oriented wideband interactive communication terminals (64 kbit/s to 8 Mbit/s): high-resolution low-priced color equipment (cameras, videotape recorders, receivers, projectors, etc.);

- Development of an extensive line of professional equipment to be connected to the digital ISDN network:
    - office work stations (64 kbit/s to 8 Mbit/s, 34 Mbit/s and 140 Mbit/s): wideband videotex, computer-aided instruction, computer-aided design, etc.
    - data-processing communication peripherals (64 kbit/s to 34 or even 140 Mbit/s): high-speed color printers, image-processing terminals, front-end communication equipment, file transfer, etc.
    - 34 Mbit/s videoconferencing;

and in particular:

    - high-definition A4-size screens;
    - document encoding by high-resolution scanners;
    - archiving on digital optical disks;
    - high-resolution high-speed telefax terminal;
    - special software for high-throughput multiwindows;
    - screen copying and printer modules;
    - simplification of man-machine relations, ergonomics;
    - image synthesis and processing software;
    - data compression.

- Develoment of distributed multi-user data servers with very high capacities and throughput rates, and associated means of communication.

Launching Procedure - Management

- Creation of European manufacturers consortia.

- Joint specification and development of key network and system components (optoelectronics, high-speed integrated circuits).

[B] Possible Partners in France

- Manufacturers

CGE (CIT-Alcatel), SSII, Thomson, equipment and component manufacturers, etc.

- Public Organizations

CNET, PTT [Post and Telecommunications Administration], etc.

[C] Possible Partners in Europe

- Great-Britain: British Telecom, General Electric, Plessey, etc.
- Italy: Italtel, etc.
- FRG: Federal Post Office Administration, Nixdorf, Siemens, etc.

[D] Benefits Derived From European Cooperation

Sharing the effort made to develop specific (switching, transmission) systems for "wideband" applications.

Eureka
Theme: Eurocom
Project Sheet: Wideband Transmission

[A] Description

Nature

Systems for digital transmission at 2 Gigabits/s.

Specific Interest

Development of the wideband public network.

Spinoffs

Development of the telecommunications industry (peripherals, equipment) and services.

Basic Technologies Involved

- Single-mode optic fiber;
- Source, multiplexers, detector;
- Switched-beam microwave-frequency antennas;
- Signal processing and switching;
- On-board systems architecture.

Working Schedule Contemplated

- Research and development of 2-Gigabit/s fiber-optics transmission systems:
  - optimization of high-throughput optic link techniques;
  - definition and development of optoelectronic components;
  - optimization of fiber characteristics.

- Research and development of payloads for wideband (30 gHz) geostationary communication satellites.

Launching Procedure - Management

Creation of European consortia.

[B] Possible Partners in France

- Manufacturers

CGE, Lyons Cables, ESD, MATRA, SAT [Telecommunications Company], etc.

- Public Organizations

PTT, CNET, etc.

[C] Possible Partners in Europe

- Great-Britain: Plessey, etc.
- Italy: Italtel, etc.
- FRG: ANT [expansion unknown], Siemens, etc.

[D] Benefits Derived From European Cooperation

Cost and market sharing.

[IV] Eurobio

- Artificial seeds
- Control and regulation systems

Artificial Seeds

Production of artificial seeds that will look like and be used like present seeds, but will cause agricultural plants to produce not only a raw material but an industrial-processing tool as well, through the introduction of new catalytic functions into the plant, which will be used during the industrial technological processing of the plant matter.

Control and Regulation Systems

R&D programs on control and fine regulation techniques that could be used for the microadministration of drugs or therapeutic products by means of devices implanted on man, or for the servo-control of bioreactors.

Eureka
Theme: Eurobio
Project Sheet: Artificial Seeds

[A] Description

Nature

To create and multiply a somatic plant embryo obtained by cloning, coated with reserves and an artificial membrane, and which would look like an be used like present seeds, with improved qualities.

Specific Interest

- Improved selection;

- Creation of hybrid varieties freed from sexual reproduction;

- Transfer of genes modifying cultural qualities (resistance to stress, diseases and insects, etc.) and technological characteristics (protein content, enzymes useful during processing, etc.);

- Possible robotization of seed manufacturing, and also of certain parts of the downstream process.

Plant genetic engineering has made considerable progress during the past few months. It is now possible to introduce new genetic information in agricultural plants.

This artificial genetic alteration can improve the plant. But, above all, it becomes possible to introduce new catalytic functions into the plant, which will prove useful during the industrial technological processing of the plant matter.

This approach consists in causing the agricultural plant to produce not only a raw material, but also an industrial processing tool. It amounts to a redistribution of tasks between field and factory, and to a revaluation of the agricultural function.

The genes artificially introduced into the plant can also be relied on to synthesize molecules that will serve to preserve the food after its technological processing. The use of chemical preservation methods could thus be reduced so as to better respect consumers' needs.

Spinoffs

- Economic: giving European companies leading positions on the world seed market (potentially worth $10 to 12 million);

- Organizational and social: changing the task and added-value distribution of the agrifood business, restructuring and revaluation of the agricultural

profession at European level: transfer between industry and agriculture. Qualification.

In addition, regulations concerning the use of enzymes and micro-organisms in agrifood substances keep increasing, and the demand offered could solve toxicity problems by introducing the technological-processing catalytic function into the plant from the start.

Basic Technologies Concerned

- Genetic engineering applied to plants;
- Enzymatic engineering;
- Plant physiology;
- Embryo culture;
- Packaging;
- Biodegradable materials;
- Coating techniques;
- Soft dehydration technique;
- Final film-coating technique;
- Development of bioreactors.

Working Schedule Contemplated

- Associating a few large laboratories and a few large companies to work on the scientific and agronomic aspect. A few small or medium-size companies (biotechnologies, fermentators, etc.) could also participate.

- Acquiring knowhow on one or two varieties. Industrial implementation would then be allocated among the participants.

[B] Possible Partners in France

- Manufacturers

Clause, Claeys-Luck, Elf-Aquitaine, Limagrain, Rhone-Poulenc, SANOFI [Aquitaine Financial Corp for Hygiene and Health], etc.

- Public Organizations

CNRS, INRA [National Institute for Agronomical Research], universities (Compiegne Technical University, INSA [National Institute for Applied Sciences], university laboratories), etc.

[C] Possible Partners in Europe

- Belgium: Plant Genetic System, SES [expansion unknown], Ghent University, etc.
- Denmark: The Danish Sugar Factory, etc.
- Great-Britain: AFRC [expansion unknown], Agricultural Genetics Company, Shell Nikkerson, etc.
- Netherlands: Royal Sluis, etc.

- FRG: Hoechst, Max Planck Institute for Breeding Research (Cologne), KWS [expansion unknown].
- Switzerland: Ciba-Geigy, Sandoz.

[D] Benefits Derived From European Cooperation

The capacities of European teams are at least equal to those of North-American or Japanese teams, but they do not have the latter's cohesion, a decisive factor of success.

European cooperation is a must if we are to emerge at industrial level within a period of time comparable to those of our U.S. and Japanese competitors.

Eureka
Theme: Eurobio
Project Sheet: Control and Regulation System

[A] Description

Nature

R&D programs on problems of control and fine regulation for use in the microadministration of drugs or therapeutic products by means of devices implanted on man, or for the servo-control of bioreactors.

Specific Interest

Recent progress in the miniaturization of regulation electronics and in the knowledge of ultra-fine biological parameters (hormonal dosages), as well as the need for bio-industries to control multiple reaction parameters (fermentator operation) using sensors and sophisticated regulation systems, lead to the recommendation that an interdisciplinary program should be set up, under which experts in electronics and servo-controlled equipment (and miniaturized equipment in the case of biomedical engineering) would work together with experts in pharmaceutics, pharmacology and clinics.

Spinoffs

- New systems to admininister drugs, in particular those requiring regulated admission depending on biological parameters.

Example: implanted pump system whose flow-rate is regulated continuously by physiological probes (insuline-diabetes, hormones-growth, etc.).

- New servo-control systems for biological reactors, continuously optimizing the bio-reactional environment so as to obtain the best yields in continuous operation.

There are a huge number of potential spinoffs in the health field: answering certain diseases or insufficiencies in a non-constraining manner, etc. as well as in the health-economics field: lower doses of therapeutic products, possibility of "decentralized" health care, etc.

There are also spinoffs in the bio-industries.

Basic Technologies Involved

- Biological and medical engineering;
- Electronics;
- Bioreactors.

Working Schedule Contemplated

- Expanding a project now under consideration with Siemens, concerning the microadministration of drugs by implanted devices;
- Research on sensors;
- Research on pumps and pump servo-control

[B] Possible Partners in France

Elf-Aquitaine, pharmaceutical groups, perfusion-pump manufacturers, etc.

[C] Possible Partners in Europe

Behring, Siemens, pharmaceutical companies.

[V] Euromat

Advanced-design industrial turbine

Development of structural materials through the construction of a high-efficiency industrial turbine.

Eureka
Theme: Euromat
Project Sheet: Advanced-Design Industrial Turbine

[A] Description

Nature

Turbine for land thermal engines of 500-1000 hp, high reliability and energy-efficiency exceeding 45 percent (industrial turbine).

Specific Interest

Increasing competence in the development and use of new materials in a single dynamic system (assembling and bonding different materials), of the "thermal engine" type.

Spinoffs

Enabling Europe to catch up in the field of ceramics.

Multiple sectors: space program, shuttle, automobiles, turbomachines, aeronautics. etc. Land and mobile-land applications.

Basic Technologies Involved

- Ceramics-to-metal bonds;
- Ceramic-ceramic composites;
- Resistance in corrosive atmospheres;
- Sintering of complex parts.

Working Schedule Contemplated (4-5 years)

1. Setting up the European project: identification of the partners and their contributions.
2. Designing the turbine and its components;
3. Drawing.
4. Research on materials: finding the optimum material for each component. Implementation of these materials.
5.Fabrication and partial testing of components (temperature exhangers, turbine, etc.).
6. Development of a demonstration model.

[B] Possible Partners in France

- Manufacturers (engine manufacturers and materials producers)

Alsthom, Ceraver, Hispano-Suiza, Rhone-Poulenc, SEP [European Propulsion Company], Turbomeca, Aubert & Duval, Imphy, SNECMA [National Aircraft-Engine Study and Manufacturing Conmpany], Framatome, Pechiney, Aerospatiale, etc.

- Public Organizations

ONERA, CNRS, etc.

[C] Possible Partners in Europe

- Great-Britain, AME [expansion unknown], British Ceramic Association, Harwell, Lucas, Rolls-Royce, etc.;
- Italy: Alfa-Romeo, Fiat, etc.
- FRG: BBC [Brown-Boveri Company], KHD [expansion unknown], KWU [expansion unknown], MTU [expansion unknown], Rosenthal, Technik, etc.

[D] Benefits Derived From European Cooperation

Enabling manufacturers to make a considerable and relatively long-term investment to constitute a common scientific and technical base.

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SDI AND SPACE ARMS

VARIOUS EUROPEAN AGENCIES, FIRMS ANNOUNCE EUREKA PROPOSALS

France's CEA To Participate

Paris ELECTRONIQUE ACTUALITES in French 17 Oct 85 p 2

[Article signed R.V.: "At a Symposium Organized for its 40th Anniversary, the CEA Stressed Its Determination to Be Represented in Eureka, in Space and in the Ocean"]

> [Excerpt] Some 250 people, including CGE [General Electricity Company], Thomson, Jeumont-Schneider, TRT [Radioelectric and Telephone Telecommunications] and Intertechnique executives, took part in a symposium organized on 14 October by the CEA [Atomic Energy Commission] to celebrate its 40th anniversary.

Certainly, as Mr Renon, CEA general director, pointed out, the nuclear sector will remain the "backbone" of CEA operations in years to come. But the CEA also intends to continue its research in non nuclear fields, especially in micro electronics. This symposium also gave the CEA an opportunity to stress its determination to be represented in space and ocean research: "We are ready to participate in the conquest of space and that of the oceans," Mr Renon stated in the presence of Mr Curien, minister of Research and Technology.

The CEA also wishes to participate in the European Eureka technological cooperation program and it has already proposed various projects: as Mr Curien observed, the CEA can decidedly play "a very important part in Eureka."

To Mr Renon, who also stressed the CEA's determination to continue its major basic research effort, Mr Curien answered: "You shall have the means to do so..."

The symposium of 14 October also gave the CEA an opportunity to stress its determination to "develop its pool of knowledge," especially in electronics, data processing and robotics, and to be "a privileged meeting place for researchers and manufacturers, a place where many technology transfers could develop."

In this respect, we should also note that, precisely to make such technology transfers easier, the CEA, for instance, just created a robotics and CIM [computer-integrated manufacturing] office, a light horizontal structure to coordinate the activities of the CEA's various directorates and subsidiaries in this field, which intends to "speak with one voice" to the CEA's partners and in particular, of course, to manufacturers. This office, the CEA indicated will "provide a connection between the various scientific and industrial entities to preserve their own dynamisms and help promote their activities as a whole."

CERN Offers Superconductivity, Cryogenics

Paris AFP SCIENCES in French 17 Oct 85 p 17

[Article: "The CERN Unveils Its Proposals for the Eureka Project"]

[Excerpt] Geneva--On 14 October in Geneva, Mr Herwig Schopper, general director of the CERN [European Nuclear Research Center], the European laboratory for particle research, unveiled the CERN's collaboration proposals to the European Eureka technological research project.

Mr Schopper pointed out that this collaboration was strictly for "civil" purposes, which might materialize in two of the laboratory's special fields: superconductivity technology, its corollary, cryogenics (methods to conserve electric current energy and to cool cavities to make this economy of energy possible when magnetic fields are created), and data-processing networks.

Aeronautics, Aerospace Firms Link Up

Paris AFP SCIENCES in French 17 Oct 85 pp 17-18

[Article: "Eureka: Cooperation Agreement Between the Five Leading Eruopean Aeronautics Companies"]

[Text] Paris-- The five leading European aeronautics and space companies--Aerospatiale (France), Aeritalia (Italy), British-Aerospace (Great-Britain), CASA [Aeronautics Engineering Company] (Spain) and Messerschmitt-Boelkow-Blohm (FRG) have signed a cooperation agreement as part of the European Eureka program, Aerospatiale announced on 16 October.

The communique indicated that the five European partners have agreed to "define possible projects according to principles defined by their respective governments in the aeronautics and space sectors."

These aeronautics firms have already cooperated in the past, in particular for the supersonic Concord, the Airbus, the ATR commuter aircraft, the Tornado fighter, the Ariane launcher and satellites TDF1-TV Sat).

The aeronautics manufacturers will furthermore define the domains in which their cooperation will be implemented, e.g. electronics, computer-aided design and manufacturing, the development of large data processing programs, robotics, lasers and fiber optics.

This agreement among manufacturers, signed on 15 October, the communique added, will also make it possible to include other companies, should the partners so decide, either as new partners in the general agreement or as associates in specific projects...

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CSO: 3698/108

SDI AND SPACE ARMS

MAX PLANCK INSTITUTE AGAINST PARTICIPATING IN SDI, FOR EUREKA

Frankfurt/Main FRANKFURTER ALLGEMEINE ZEITUNG in German 4 Dec 85 p 1

["Max Planck Society Against Secret Research"--AP headline]

[Text] The Max Planck Institute has raised considerable reservations against its participation in the American research involved in the SDI missile defense system under present conditions. The president of the private research society, Heinz Staab, recently stated in Bonn that the necessary prerequisites for the work of the Max Planck Institute is the "free information exchange" with scientists from all over the world. Secret research in these institutions is said to be "unimaginable." Thus far, the Max Planck Institute has not been asked by any side to participate in SDI.

The president welcomed the Eureka concept of the European Technological Community, which in the meantime has been expanded, which permits freedom of basic research and does not represent a European competition model for SDI. Another viewpoint is said to be that this concept augments the "one-way street" of researchers and research results from Europe to the United States by cross-connecting European science. It would naturally have been better had the program been based on existing scientific contacts and not "imposed from above."

Staab reiterated the objections against German participation in a manned space station which had been jointly formulated by the German Research Community and the West German Conference of University Rectors. In view of limited financial means for research, particularly stringent yardsticks have to be applied to possible scientific results. The limits of "science on the grand scale" lie where the breadth and multiplicity of basic research is overpowered.

5911
CSO: 3698/173

INTERMEDIATE-RANGE NUCLEAR FORCES

TASS: TIMING OF U.S. MISSILE DEPLOYMENT 'NOTEWORTHY'

LD121639 Moscow TASS in English 1615 GMT 12 Dec 85

[Text] Moscow, December 12 TASS--TASS news analyst Vladimir Matyash writes:

In disregard for the interests of European and international security, the United States goes on with rapid deployment of first strike nuclear missile weapons in Western Europe.

Allen Holmes, U.S. assistant secretary of state for politico-military affairs, has reported, speaking in the Belgian capital, that 140 launchers for "Pershing-2" and cruise missiles armed with nuclear warheads are to be stationed on the European Continent by early next year. The United States intends to deploy a total of 572 medium-range missiles by 1988. According to the latest official report by NATO officials, a total of 134 missiles have already been in place by now in the Federal Republic of Germany, Britain, Italy and Belgium. So, as early as in the next few weeks, the Pentagon and NATO will deploy in European territory almost a half of nuclear systems planned by the decisions of the North Atlantic bloc.

Noteworthy is the time chosen for these actions of the United States and the most aggressive NATO quarters, which are perilous to the cuase of peace. Only three weeks have passed since the general secretary of the CPSU Central Committee and the U.S. President met in Geneva and recorded in the joint statement on the results of this meeting the readiness and intention of both sides to work for removing the nuclear war threat and prevent a military edge of the Soviet Union and the United States over each other. They confirmed the need to work for enhancing strategic stability and reducing nuclear armaments. All this, apparently, goes against the grain of the advocates of the so-called "tough" course towards the Soviet Union and of the ongoing arms race.

This line for the sabotage of what has been reached in Geneva is in conflict with the interests of both the American people and the European peoples. It is perfectly obvious that by embarking on the course of attaining military superiority over the USSR, the U.S. Administration speeds up the stationing in Western Europe of U.S. first strike missiles. A situation emerges, which is fraught with a high level of military-political uncertainty and the risk attending it.

It is understandable that the nuclear arms race is a cause of particular concern for the European nations. People in the Soviet Union share this worry, since Europe is oversaturated with nuclear systems. The Soviet Union stands for freeing Europe completely of nuclear weapons, both medium range and tactical. The United States and its NATO partners, however, do not agree to this.

Proceeding from the interests of peace and enhanced international security, the Soviet Union has proposed, given a total ban on strike weapons, to halve all nuclear systems in possession of the USSR and the United States capable of reaching each other's territory and to limit the sum total of warheads on them to 6,000 units each. These are drastic reductions measured in thousands of nuclear warheads.

The Soviet Union demonstrated in deed to the whole world to see its wish and readiness to follow the path of formulating meaningful accords aimed at limiting and reducing nuclear armaments. The anti-war movement, which is gaining momentum in Europe, is fresh evidence that the Soviet proposals meet the European peoples' aspirations for lessening the nuclear threat and enhancing European security.

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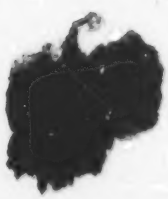

SOVIET ARMY PAPER ON CONTINUED U.S. PRESSURE ON NETHERLANDS

PM111131 Moscow KRASNAYA ZVEZDA in Russian 11 Dec 85 Second Edition p 3

[TASS report: "The Pressure Continues"]

[Text] The Hague, 10 Dec -- The United States and the NATO bosses continue to bring powerful pressure to bear on the Netherlands in an attempt to secure the rescindment of its decision to refuse to fulfill some of the NATO tasks incumbent upon it in the sphere of the use of tactical nuclear weapons. This has once again been confirmed in the speech of U.S. General B. Rogers, supreme allied commander, NATO Forces, Europe, at a meeting of the Atlantic Committee -- a private pro-NATO organization in the Netherlands.

Having expressed unconcealed satisfaction on account of the decision by R. Lubbers' center-right government of consent to the deployment of 48 U.S. cruise missiles on the Netherlands' territory, Rogers nevertheless insisted that this country continue to fulfill in full all the tasks incumbent upon it within the framework of NATO's military structure in case of the outbreak of a war. As is well-known, announcing on 1 November this year its consent to the deployment of first-strike missiles, in the face of powerful opposition from the opponents of this dangerous step, the Netherlands Government simultaneously announced its renunciation of some of its "nuclear tasks" within the NATO framework.

Sharply criticizing this decision of the Netherlands, General Rogers stated that, in the event of a nuclear war, NATO strategy envisages involving as many countries as possible in this war at a very early stage, and, in his opinion, the refusal to use aircraft with nuclear weapons on board would deprive the Netherlands of the opportunity of participating. At the same time the NATO supreme commander voiced the fear that such a step by the Netherlands could "create a dangerous precedent" for other members of NATO.

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INTERMEDIATE-RANGE NUCLEAR FORCES

TASS NOTES 'HYPOCRISY' OF UK ARMS CONTROL POLICY

LD161623 Moscow TASS International Service in Russian 1600 GMT 14 Dec 85

[Report by TASS correspondent Victor Borodin]

[Text] London, 14 Dec (TASS) -- The peace-loving public of Great Britain today held a mass protest demonstration at the U.S. Air Force base at Greenham Common (County of Berkshire), where the very new U.S. first-strike nuclear cruise missiles have already been brought up to a state of combat readiness. The courageous women of the "peace camp" at Greenham Common and several thousands of their supporters who converged here from all over the country took part in it.

As participants at the demonstration stated, they have gathered at the arsenal of "cruise death" to express their angry protest against the military preparations being continued by the West and being foisted on Great Britain and other countries of West Europe by the U.S. Administration.

In these days when the 6th anniversary of the passing of the shameful decision to site U.S. cruise missiles by the NATO bosses is here the world has not become a safer place. On the contrary, the leaders of West European countries, having decided irresponsibly to site these nuclear systems on their territory have faciliated an escalation in the arms race and the further worsening of the international situation. This bears witness in particular to the cynical hypocrisy of the Tory government which speaks out in favor of establishing arms control but in deeds obligingly fulfils the military directions of the United States and NATO. All this serves the dangerous aim of deepening the gulf of mistrust between countries and peoples, relating to different political systems and to convince the peace-loving public of the inevitability of nuclear war and the possibility of gaining victory in it. The intensive preparations at the military base in Molesworth for the reception and siting of a new batch of U.S. cruise missiles serve the same purpose, the speakers stressed in their speeches.

Official London, an activist in the peace movement from the town of Newbury (L. Edwell) pointed out, is thus not only reconciling itself to the nuclear occupation of Great Britain by the U.S. military clique but it is also turning the country's territory ever more actively into a target for a retaliatory nuclear strike in the event of a war beginning through the fault of the U.S. or NATO strategists.

The military police arrested 12 participants at the demonstration. Judicial and police repressions by the authorities have more than once in the past too been unleashed on the participants of the broad antiwar movement and the residents of the Greenham Common Camp. On the orders of the Tory government they even tried to bulldoze the camp from the face of the earth. But it exists. And as its bold inhabitants declared today, the struggle at Greenham Common, and as a whole around the country, will not cease until such time as "official Washington and London come to their senses and remove the cruise missiles from the British Isles as millions and millions of people are demanding."

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INTERMEDIATE-RANGE NUCLEAR FORCES

BRIEFS

TASS ON TOMAHAWK MISSILE FAILURE--Washington, December 9 TASS--The first testing of a cruise missile "Tomahawk" in the zone of the east coast of the USA has been a failure. According to a spokesman for the Pentagon, the missile was launched from a submarine in the Gulf of Mexico, but because of a malfunction of the control system an order came from a surveillance plane to stop the flight and a parachuting system was activated. The missile fell near the city of Freeport in Florida state and was then delivered to the Eglin Air Force base. The testing held was one of the elements of the program for a re-equipment of the U.S. Navy, within whose framework it is planned to purchase nearly 4,000 cruise missiles "Tomahawk" for equipping 190 surface ships and submarines. [Text] [Moscow TASS in English 1334 GMT 9 Dec 85 LD] /12858

GORBACHEV ANNOUNCES SS-20 STRUCTURES 'DISMANTLED'--Moscow, December 12 TASS--General Secretary of the CPSU Central Committee, member of the Presidium of the USSR Supreme Soviet Mikhail Gorbachev, receiving chairman of France's National Assembly Louis Mermaz today, stated: The Soviet Union's readiness to do everything in its power for resolving the problems of disarmament is confirmed by weighty practical steps. Thus, it was announced during the visit to France that the Soviet Union, at its own initiative, had removed the SS-20 missiles, additionally deployed earlier on in the European zone, from standby alert, while stationary structures for the missiles would be dismantled in the following two months. The USSR has kept its promise--the dismantling has been completed. [Text] [Moscow TASS in English 1740 GMT 12 Dec 85 LD] /12858

BELGRADE: SOVIET SPOKESMAN ON SS-20'S--Brussels, December 11 (TANJUG)--The Soviet Union aims to reduce the number of its SS-20 medium-range missiles on European territory to 243, a Soviet Embassy spokesman in Brussels announced this evening. Speaking at a press conference prior to the NATO ministers session in Brussels tomorrow, he said he was unable to confirm whether the reduction had already been effected, but pointed out that it provided proof of the Soviet Union's readiness to reach an agreement on disarmament in general and in particular on the reduction of medium-range missiles in Europe. [Text] [Belgrade TANJUG in English 0158 GMT 12 Dec 85 LD] /12858

TASS ON PERSHING-2 DEPLOYMENT IN FRG--Bonn, December 13 TASS--The deployment of 108 American nuclear Pershing two missiles has been completed in the Federal Republic of Germany. DPA news agency has reported, quoting informed sources in the NATO Headquarters in Brussels. This means that all American nuclear missiles of this type, envisaged by the NATO decision on "rearmament", have been based in the country contrary to the will of its population. Treading in Washington's footsteps, the right-wing conservative government in West Germany allowed the transformation of the country's territory into a launch pad for first-strike nuclear missiles targeted on socialist states. [Text] [Moscow TASS in English 2240 GMT 14 Dec 85 LD] /12858

TASS ON U.S. PERSHING-2 TEST--Washington, December 16 TASS--The United States carried a test of a Pershing-2 medium-range missile. The UPI news agency reports that it was the first in a series of test launches designed to check the combat readiness of U.S. missile crews stationed in West Germany. The deployment of all 108 Pershing-2 nuclear missiles has already been completed there in compliance with the NATO decision of December 1979 which provides for the siting of 572 Pershing-2 and cruise missiles in Western Europe. These systems are first-strike weapons and their deployment is a move aimed at achieving strategic superiority over the Soviet Union. [Text] [Moscow TASS in English 1941 GMT 16 Dec 85 LD] /12858

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END

JPRS-TAC-86-008

13 January 1986

Worldwide Report

ARMS CONTROL

FBIS FOREIGN BROADCAST INFORMATION SERVICE

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13 January 1986

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SDI AND SPACE ARMS

FRG CABINET DECIDES TO BEGIN SDI NEGOTIATIONS WITH U.S.

Bangemann To Conduct Negotiations

LD181107 Hamburg DPA in German 1044 GMT 18 Dec 85

[Text] Bonn, 18 Dec (DPA) -- The federal cabinet has today decided to start negotiations with the United States on SDI. As has become known in Bonn on this, the Federal Government intends to agree on framework conditions for the exchange of research results and thus to cover the flank in civil law of the companies and institutes which want to take part in the SDI research on missile defense in space.

There are not to be any treaty-based political commitments. There were also no plans either for state participation or for the provision of state funds. The negotiations with Washington will be conducted by Federal Economics Minister Martin Bangemann.

Kohl Comments

LD1/1525 Hamburg DPA in German 1150 GMT 17 Dec 85

[Excerpt] [No dateline as received] — Chancellor Helmut Kohl, in an interview on South German Radio, said that the SDI decision involves neither production nor deployment, but research, which could continue up to 8 years. According to the chancellor, eight West European countries have promised the Americans their cooperation. Kohl made plain that the technological development, although its effect should not be underestimated, is for him no reason "to participate in SDI." Indeed, he is not the initiator of this project. However, SDI is a reality and has evolved for "reasons of security development." Kohl again made it clear that no state funds will flow into SDI research. What is at stake is the participation of German firms in American research.

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SDI AND SPACE ARMS

FURTHER REPORTAGE ON FRG SDI NEGOTIATIONS DECISION

'Text' of Decision

LD181429 Hamburg DPA in German 1313 GMT 18 Dec 85

["Text" of 18 December cabinet decision to begin negotiations with the United States for participation in SDI research]

[Text] Bonn, 18 Dec (DPA) -- The Federal Government intends to reach agreement with the United States on an improvement in the framework of conditions for the reciprocal transfer of scientific research findings and technical knowledge. This is also intended to improve the legal position of those German research institutes and firms which decide to participate in the SDI research program as contractors.

In this respect the general regulations for the protection of secrets, technology transfer, rights of ownership, use and exploitation as well as pricing, price control, and the placing of orders will be developed -- in so far as they exist -- or formulated.

The federal economics minister is delegated to begin the necessary negotiations with the U.S. Administration in January 1986.

The Federal Government reaffirms its position of 27 March 1985 and the government statement by the federal chancellor in the Bundestag of 18 April 1985, in which it declared its political support for the United States' research program which has been set in motion as SDI.

The Federal Government does not want state participation in the SDI research program. Consequently, it will not make public funds available for cooperation projects, which, incidentally, has not been called for by the U.S. Administration.

The Federal Government welcomes the intensive consultations taking place between the U.S. Administration and the alliance partners and within the NATO framework on all topics of the Geneva negotiations and on questions concerning SDI. They are indispensable for the Federal Government and emphasize the importance which the United States attaches to agreement with its alliance partners. In this respect the strategic consequences of SDI research and those for arms control policy stand in the foreground for the Federal Government.

The Federal Government affirms its demand that SDI research should develop into cooperative solutions. The Federal Government will continue to make an effort -- including debate in the West European Union -- that the Europeans should contribute by adopting a joint position on consulting with the American alliance partner.

Genscher Comments

LD181443 Hamburg DPA in German 1329 GMT 18 Dec 85

[Text] Bonn, 18 Dec (DPA) -- Federal Foreign Minister Hans-Dietrich Genscher said on Wednesday in reply to a question from DPA that he was "very satisfied" with the cabinet decision to start negotiations with the United States on establishing a framework for the transfer of research findings. In FDP circles, the considerable agreement between the cabinet document and the decisions of the parliamentary group and the party executive waspointed out. Negotiations on the whole technological sphere, with which the position of the German companies which are interested in participating in SDI research is "also" to be improved, were now at the top of the agenda.

For the CDU/CSU, its floor leader, Deputy Volker Ruehe welcomed the cabinet's "green light" and demanded "swift" negotiations. What form the framework agreement would take would depend on the outcome of the negotiations. The decisive political support from the Federal Government had existed since 18 April. The cabinet decision had not added anything to it or taken anything away. CDU/CSU disarmament expert Juergen Todenhoefer called the cabinet decision "sensible and wise" and stressed in particular Bonn's interest in security policy.

FDP General Secretary Helmut Haussmann considered "the governing coalition's ability to act was proved once again" by this decision. It was important that the FDP chairman, Economics Minister Martin Bangemann, had received the task of conducting the negotiations.

The Coordinating Committee of the Peace Movement announced an intensified domestic confrontation. It stated that the cabinet decision had come about against the declared desires of a majority of the population.

SPD Criticizes Government

LD181818 Hamburg DPA in German 1728 GMT 18 Dec 85

[Text] Bonn, 18 Dec (DPA) -- The opposition SPD has strongly criticized the SDI decision. It is now official that the Federal Government wants a framework agreement with the United States on participation by German industry in the American "star wars" program, SPD group chairman, Deputy Horst Ehmke said. Although the government is trying to disguise the political aspect of its decision, it amounts to political and moral support for an extremely controversial and dubious arms project. The FDP, which had repeatedly expressed criticism of SDI in recent months, had given in once again "purely in order to hang on to power."

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SDI AND SPACE ARMS

FURTHER REACTION TO FRG SDI NEGOTIATIONS DECISION

Strauss Comments

LD221533 Hamburg DPA in German 1349 GMT 22 Dec 85

[Text] Hamburg, 22 Dec (DPA)-- The Federal Government's decision to begin negotiations with the United States in January on the participation of German firms in the U.S. research program for a space-based missile defense system (SDI) in the opinion of CSU leader Franz Josef Strauss is "not quite satisfactory." In an interview with the newspaper BILD (Monday's edition), Strauss says that no cabinet decision was needed to begin negotiations, only to approve the results. Apart from the interests of the German economy, it was also a question of expanding the SDI program to cover European security interests, as "we are threatened by Soviet short- and medium-range-missiles." To keep quiet about that would be "unnecessary soft-pedaling." The text of the interview was prereleased to DPA.

Papers Remark

DW191130 Cologne Deutschlandfunk Network in German 0605 GMT 19 Dec 85

[From Press Review]

[Text] One of the editorial topics today is the cabinet decision on SDI negotiations with the United States.

SUEDDEUTSCHE ZEITUNG writes: It requires quite a bit of art to promote a third-rate problem to becoming an issue determining the national fate, thus unleashing a major domestic political quarrel, only to have it eventually fall between the cracks.

The quarrel is about SDI and the form of German participation in a project that will take shape in the next millennium, if at all. The federal cabinet decided it in its own way by officially declaring a long-term strategic problem to be an economic-political problem, thus putting it into the hands of Economics Minister Bangemann. In negotiations with Washington, there will be no political stipulation or government subsidies. Why then was there a month-long tempest in a teapot, asks the newspaper.

Essen's NEUE RUHR-ZEITUNG notes: It would be better if the Federal Government made it clear internally and externally that it does not necessarily follow every U.S. move, even if it wants to reach for the stars. It would also be good if scientific-technical cooperation were not a one-way street. It would be to our greatest advantage if Bonn were to succeed, together with

West Europeans, in convincing Washington that even with the SDI missile defense system in place no absolute security can be achieved, not for the United States, not for Europe. None of that is in accordance with the line followed by Kohl and Woerner, but it is in line with Riesenhuber's ideas. He is concerned with protecting German research and development work. And it is in line with Genscher, who, as an experienced foreign minister, has rejected the SDI vision of a total defensive network in space from the very beginning. It was certainly because of him that economics minister was commissioned to negotiate, so that negotiations are now in the hands of the FDP.

The Ludwigshafen DIE RHEINPFALZ states: Kohl and his government went to quite some effort to make a decision. No other government has dealt so comprehensively with the SDI project. Therefore, such accusations as obedience in advance reflect on those who make them. Even if SDI turned out some day to be just a dream of a world without nuclear weapons, such great results will have been achieved in high technology, applicable in the FRG, that any decision other than yesterday's would have been irresponsible from a state, as well as from the economic-political standpoint.

MUENCHNER MERKUR writes: There was no doubt that Washington would stick to the SDI program, with or without German cooperation. The Soviets have been remarkably successful in this type of research for some time. In contrast to France, the FRG, as a country directly involved in the East-West dispute, does not participate in too many involved decisions. It, therefore, depends particularly on a functioning Bonn-Washington axis. SDI goes to the core of the Atlantic alliance, whether one likes it or not. He who withdraws to the corner to sulk in such a situation, thus discarding every opportunity to exert influence and trusting that the Americans will do the right thing, would be acting politically foolish, as Bundestag President Philipp Jenninger put it

DIE WELT sees the situation as the following: Helmut Kohl has achieved what he wanted, negotiations with the United States that will lead to a framework agreement on German firms cooperating in SDI research. The FDP saved face by achieving the goal of negotiations beyond SDI--a general improvement of framework conditions for the mutual transfer of scientific research results and technological findings. That is exactly what the Teltschik Commission called the optimal achievement from the very beginning. It is decisive that the cabinet decision expressly confirms political support of the U.S. research program, support expressed in the 18 April government decision.

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SDI AND SPACE ARMS

VARIOUS VIEWS TO FRG PARTICIPATION IN SDI

Kohl's Remarks

LD131642 Hamburg DPA in German 1550 GMT 13 Dec 85

[Text] Bonn, 13 Dec (DPA) -- Chancellor Helmut Kohl believes the U.S. defense initiative or SDI is of great significance to the security of Europe and the Federal Republic. In an interview with the Bonn paper GENERAL-ANZEIGER (Saturday's edition), the chancellor points out that so far firms in eight European countries, including France, have accepted the invitation from the Americans to cooperate in SDI.

In Kohl's view the Americans put a high value on a German decision for a framework agreement on SDI. The chancellor confirmed that a decision will be made in the coming weeks upon embarking on negotiations with Washington. He regards the American research as justified. European and German security will not be uncoupled; this is a fundamental point, "so long as the superpowers do not reach an arrangement to our disadvantage."

Genscher Comments

LD151352 Hamburg DPA in German 1244 GMT 15 Dec 85

[Excerpt] Bonn, 15 Dec (DAP) -- Over the weekend prior to the cabinet decision about FRG participation in the U.S. plan for a space-based missile defense system (SDI) planned for Wednesday different quarters have again been expressing their views on the question of cooperation.

In the opinion of Foreign Minister Hans-Dietrich Genscher (FDP), there will only be "minimal participation" by FRG industry in SDI. FRG participation is being much exaggerated, Genscher said in an interview today with South West Radio. The research program is an "American program," which will have an influence on joint security in the alliance. He also stressed that it must be clear that "we do not want to arm the East to death nor do we want to shake the East off economically."

Richard Burt, the U.S. ambassador in Bonn, told Deutschlandfunk it is not true that the United States urgently wants a framework agreement on FRG participation in SDI. This is a matter for the Federal Government. Participation by FRG firms is possible with or without a framework agreement.

Scientists Open Letter

LD071353 Hamburg DPA in German 1615 GMT 6 Dec 85

[Text] Munich, 6 Dec (DPA) -- The open letter from 350 physicists, mathematicians, and technicians from the Munich area who refuse to take part in research connected with the U.S. SDI project has meanwhile been signed by over 3,500 scientists and technicians throughout the country. This was announced in Munich on Friday by the initators of the open letter physicists Professors Juergen Ehlers and Werner Fuss of the Garching Max Planck Institute.

In their recent letter to Chancellor Helmut Kohl the scientists stress that their rejection of SDI is not the view of a minority. Apart from the result of collecting signatures, the impression has been intensified by the many discussions in which the majority of scientists and technicians reject the SDI project. SDI leads to an additional danger to security. The signatories of the appeal would equally reject any striving for superiority by the Soviet Union. "But the SDI plans come from Washington, not Moscow."

Polls Shows Opposition

LW100845 Mainz ZDF Television Network in German 2045 GMT 9 Dec 85

[Report by Olaf Buhl during the "Heute-Journal" program]

[Excerpt] SDI is vehemently controversial among the people. On behalf of ZDF, the research group for elections asked more than 1,000 FRG citizens whether the FRG should participate in the U.S. "star wars" project. The result: 31 percent want the Federal Republic to participate, but 46 percent do not. Amazing enough, 22 percent never even heard of the space-based defense missile project.

There is a clear majority for SDI among CDU voters; 47 percent want participation, while 31 percent oppose participation. In the case of the SPD, conversely, only 22 percent want SDI, while 58 percent oppose "star wars." FDP followers are even more determined in recommending SDI than the CDU/CSU: 51 percent are for it, while 36 percent against it. And the Greens? Only 12 percent want the U.S. defense initiative, 76 percent do not.

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SDI AND SPACE ARMS

FRG'S KOHL FORESEES BETTER EAST-WEST TIES IN 1986

LD192056 Hamburg DPA in German 1904 GMT 19 Dec 85

[Excerpts] Bonn, 19 Dec (DPA) -- Federal Chancellor Helmut Kohl believes that internal and external peace is assured for 1986. In an interview for the southwest broadcasting authority television program "Landesspiegel," broadcast in Bonn this evening, Kohl said that "all the signs point to 1986 being a good year". Kohl said that the coming year also offers a good opportunity to make progress in small steps in disarmament negotiations. In this connection he described the U.S. SDI research project as "not only politically but also morally justified."

In the interview Kohl denied speculation that tensions have arisen between Bonn and Paris, not least on account of German participation in the SDI program. There have never been any such tensions, he said. French-German relations are "excellent."

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CSO: 5200/2595

SDI AND SPACE ARMS

FRG'S GENSCHER COMMENTS ON SDI

LD191219 Hamburg DPA in German 1122 GMT 19 Dec 85

[Excerpt] Bonn, 19 Dec (DPA) -- The problems which result from American and Soviet SDI-type research "will be with us for many years to come." This warning was issued by Federal Foreign Minister Hans-Dietrich Genscher on Thursday. In an interview with the DEUTSCHE ALLGEMEINE SONTAGSBLATT, distributed by the Foreign Affairs Ministry, Genscher again emphasized the problems posed by SDI must be discussed within the alliance.

The cabinet decision on legal, technological negotiations with the United States did not deal "with the real problem." The SDI debate sometimes obscures the view because the overall East-West dimension comprises much more than merely conflict over SDI.

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CSO: 5200/2595

SDI AND SPACE ARMS

FRG BUNDESWEHR COMMANDERS HOLD 3-DAY MEETING

LD151230 Hamburg DPA in German 0801 GMT 15 Dec 85

[Excerpts] Bonn, 15 Dec (DPA) -- Inspector General of the Bundeswehr Wolfgang Altenburg still sees many questions in the U.S. plans for a space-based missile defense system (SDI). In an interview with DPA on Sunday in connection with the meeting of commanders in Karlsruhe that begins on Tuesday, 17 December, Altenburg said that for the Europeans it is of decisive importance that Europe's security is not uncoupled from the security of the United States as a result of SDI. It would be disastrous if the superpowers were the only ones to be invulnerable as a result of space-based missile defense systems. This would mean that a conventional war in Europe would become feasible once again.

However, Altenburg put forth the point of view that it is important to bring European and national interests into the current U.S. research work and considerations. "For me that means: We must take part, because only by taking part can we exert an influence." The financial means needed to strengthen NATO's conventional defense capability must not be spent on SDI. "But there is also the possibility that money that flows into SDI research will bring knowledge that will help to strengthen conventional defense." One must "bear the risks in mind" in the space program.

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CSO: 5200/2595

SDI AND SPACE ARMS

FRENCH PRESIDENT DISCUSSES SDI

LD152227 Paris Television Service in France 1900 GMT 15 Dec 85

[Interview with President Francois Mitterrand by Paris TF-1 Television correspondent Yves Mourousi in Paris on "That Concerns Us, Mr President" series--live]

[Excerpts] [Mourousi] Still on the theme of space, why has France turned down the U.S. "star wars" project so dear to President Reagan, when another part of Europe has agreed to it? I want to know what France's exact policy is in this area.

[Mitterrand] President Reagan spoke to me about it for the first time himself in Bonn at the summit of industrialized countries in the first part of the year. He explained it to me. He explained that he wanted France to be able to participate in this SDI--Strategic Defense Initiative--as subcontractors. That is to say that the plans, the strategy with military objectives, they are satellites around the earth, which will keep a watch on our planet and will intervene in such a way that by nonnuclear means, namely lasers, they could destroy from takeoff the missiles that could come from elsewhere to launch a war. It is for military purposes. At that moment there was a conference which was taking place in Geneva, which was still taking place in Geneva--you saw Messrs Reagan and Gorbachev meeting there, which already had this on the agenda. [sentence as heard] Personally, I think that it was better to let discussion flow between the two greatest powers before deciding unilaterally to take part in this program. As for France, I think she should first of all turn to Europe to try to establish a space strategy for civilian purposes. If the need arises for military purposes--this remains to be seen--of course, France is in a position to do this, but Europe is not yet in a suitable political position to take this--how shall I express it?--planetary outlook.

So we in France are growing. It is the country, at the moment, that is launching the ideas, which is initiating projects. We, too, have ambitions in space. I insist that there should be observation satellites, but SDI--to act as subcontractors--it is the United States that will make all the decisions, what they will order, what they will....

[Mourousi, interrupting] But all the same, there are a hundred or so businesses, Mr President, around a hundred French businesses that are chasing after the contracts....

[Mitterrand] French businesses can sell what they want to whoever will buy from them. I am not there like a bogeyman to prevent French businesses from working. But I refuse to attach myself to a military space plan which, in fact, will do nothing but worsen the situation of international tension and which would put France in the position of a subordinate. I refuse, that is all, there you are, this is my reason, and it is as simple as that.

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CSO: 5200/2596

SDI AND SPACE ARMS

FRENCH DEFENSE MINISTER QUILES DOUBTS CREDIBILITY OF SDI

PM181416 Paris LE MONDE in French 18 Dec 85 p 6

[Interview with Defense Minister Paul Quiles by Jacques Isnard--date and place not given]

[Text] [Isnard] You have just returned from your first official visit to the United States. The Strategic Defense Initiative [SDI] was the focal point of your talks. What is your overall impression?

[Quiles] The main impression relates to the men in charge of this question: I was struck by the strength of their conviction, their enthusiasm, and their determination. A number of guidelines emerge from the many ideas they are producing. Although views sometimes differ, I could distinguish three approaches.

With regard to the long term, after the years 2015-2020, I think what was being said was essentially political. The American people are being offered the means of ridding themselves once and for all of the threat of nuclear apocalypse.

With regard to the medium term, the proposals are essentially military. The aim is to propose solutions to the maintenance of the reprisal capability of American missiles in the framework of the present doctrine.

Finally, I see a third type of technological and industrial argument.

Given the timescale, these concerns have an almost immediate character: The SDI looks like a 5-year research program which, in some respects, has already entered the research and development phase.

[Isnard] The long-term plans of the officials herald the disappearance of nuclear weapons, rendered useless by SDI, at an unspecified time. Do you think this is credible?

[Quiles] The Americans' presentation of SDI is concerned with making an impact on people.

With regard to what is said, very different expressions have been used to describe the project: "Strategic Defense Initiative" came first, but this term, which is too complex for public opinion, has been replaced by the expression "star wars." However, this description worried those who are proposing to abolish war through SDI. There was then talk of "space defense" and then of a "peace shield." Some people are now talking about the idea of a protective "bubble" above the United States or of a "dome" placed above the Soviet Union.

With regard to the impact of what people are being shown, I am struck by the importance assumed on television screens throughout the world by multicolored sketches and very evocative cartoons including film clips of real tests on earth or in space. This is reminiscent of some scenes in great films like "War Games," or "2001, a Space Odyssey."

What has been achieved so far in the scientific sphere? The Americans have carried out three tests: the destruction of a warhead reentering the atmosphere by a ground-launched missile; the destruction of a satellite by a small missile launched from a plane; the destruction by ground based laser of an old rocket positioned on the ground 1 km away from it.

The first test is a classical one and stems from a well-known concept: that of terminal ABM defenses. Such systems already exist in the USSR and we already know how to protect ourselves against them. Paradoxically, the second test shows the great fragility of a space defense system. Finally the third test is perplexing: What relation is there between a laser on the ground firing at a close target fixed to the ground and a laser in space which has to destroy a fast-moving missile several thousand kilometers away? At present, powerful lasers are as big as an apartment building, and, at least for the time being, no one can place such a volume and such payloads in a satellite.

I do not dispute the fact that very great progress may be achieved in the next 30 years. But let us recall a few facts relating to the implications of the full implementation of the plan:

1 -- Several hundred satellites would have to be launched and one satellite would have to be put into space every week to maintain and replace them;

2 -- Satellites carrying directed energy weapons (lasers, particle beams, and so forth) would weigh several dozen metric tons and would be very bulky. At present, it is impossible to make a powerful laser less than 100 meters long;

3 -- The lasers have to be fed by sources of electricity of the order of 10 billion volts, which in practice means putting veritable nuclear power stations into orbit;

4 -- It is not enough just to have satellites carrying directed energy weapons, you also need a very large number of radar surveillance satellites, optical satellites, communications satellites, and so forth. It is also necessary to place huge computers in space with a capacity and speed 100 times greater than anything envisaged for the next 10 years.

There is nothing to say that all this will not be technically possible sometime in the distant future. But the most optimistic forecasts do not enable us to regard the project as credible in the immediate present, even on a 50-year timescale. Science may make progress, sometimes even rapid progress, but it cannot achieve miracles: The laws of physics or celestial mechanics cannot be broken.

On the whole, after my visit to the United States I am still doubtful about the probability that such a system can be built. My doubts are strengthened when I see that some great American scientists themselves are warning their political leaders against an objective based on excessive confidence in the unlimited possibilities of science.

People will argue that the Americans succeeded in going to the moon. Allow me to point out, however, that the aim of the Apollo program was not only to go to the

moon, but to stay there, to live there, and to install factories there. That part of the project has disappeared. After four trips, which were successful, the plan to use the moon was abandoned by both the United States and the USSR.

I think the same will be true of SDI, which will produce some results which will of course be very spectacular, but it will not be possible to implement it in full.

[Isnard] You spoke of a second set of ideas aimed at strengthening nuclear deterrence by a military plan to prevent a Soviet first strike. Is this more serious?

[Quiles] I am surprised by the fuss the media is making about this plan. It is the first time in history that a military program, which ought to be kept top secret, has been given so much publicity. This leads me to think that we have here a plan with more of a political than a military purpose. Indeed, in the sphere of military strategy, I note that many problems have not yet been solved:

1 -- The system seems fragile. The Americans and the Soviets have already demonstrated their ability to destroy satellites. This makes it all the easier to imagine the capacity the two superpowers, or even we, will have in 10 to 15 years to penetrate a space-based defense system. The cost of a project to effect the destruction of a space shield system is much lower than the cost of installing this system.

2 -- We are already able to protect missile warheads from outside attack. They resist the effects of nuclear explosions. In the future, the very body of the missiles may also be rendered invulnerable.

3 -- It is easy to deceive the system with a very large number of missiles without nuclear warheads -- which are therefore cheap -- or to saturate it by firing a large number of missiles simultaneously.

4 -- There are already nuclear weapons which are not transported outside the atmosphere and which are therefore protected from the space shield (cruise missiles, "stealth" bombers, nuclear artillery, nuclear torpedoes, and so forth).

5 -- People forget the incredible imbalance in the conventional arsenals: It is very clear that nuclear deterrence has made a major contribution to the fact that Europe has not had a war for 40 years despite this imbalance.

SDI's real purpose seems to me to be to create a consensus within American society. Thanks to this project, President Reagan has rallied most sections of opinion in his country. SDI is primarily a response to the expectations of the American people for whom the only real threat is presented by the Soviet intercontinental missiles. It satisfies the pacifist movements and the churches which protest nuclear weapons while still being deeply attached to their country. It is in keeping with the wishes of the military and of industrialists to strengthen the American defense effort and boost the image of the United States as a great power. Finally, it poses a challenge of the "new frontier" type, rather similar to the challenge of "conquering the moon." These are all themes likely to unite and mobilize American society.

[Isnard] Are you convinced by the third set of ideas relating to the short-term technological repercussions?

[Quiles] For the time being SDI is a research program aimed at acquiring the necessary technologies for the space shield. These include:

-- Directed energy weapons (lasers, particle beams) for which the aim is to achieve the greatest possible power and miniaturization in order to place them on a satellite;

-- The development of optronic (infrared) and radar technologies to detect, pick out false alarms, and determine the trajectory of the missiles;

-- The development of optical technologies (mirros to direct the laser beams);

-- The development of powerful computing means to manage the battle (computers, software, and so forth).

This is undoubtedly a challenge which the United States has set itself. Like the program to conquer the moon, there must be considerable technological and economic repercussions for American society, and at a military level, with regard to conventional weapons.

Will the considerable financial effort envisaged be in keeping with the probable technological gain? The question deserves to be asked, even if there is no doubt that any human enterprise on a certain scale constitutes a challenge.

In this respect, Europe is not remaining passive. Eureka, the European program launched at France's initiative, will make it possible to pool scientific knowledge and carry out high technology projects. Of course, these projects will relate to the civilian sphere, but it is not impossible that some may have military applications (lasers, powerful computers).

[Isnard] Can you tell us what reservations France has? Are your doubts about the system's credibility the only explanation?

[Quiles] The reason we have expressed serious reservations about the project launched by one of our allies is that we doubt whether it can be implemented and because we think it presents risks.

Why? First, because SDI will probably revive the arms race. Neither of the two superpowers can accept strategic inferiority. Since offensive systems -- ballistic missiles or antisatellite weapons -- will be less costly than the proposed defensive system, the response to SDI will be a new increase in offensive arsenals. Second, space defense is likely to be another Maginot Line, whose cost will exceed all previous military projects. However, financial resources are not inexhaustible, not even for the superpowers!

In addition, this project creates what I will call a conceptual destabilization, which may rapidly call into question the defense policies of the Western world, although there is not yet anything to replace them with. I am afraid that SDI might initially arouse false hopes, and that might break the consensus in France on nuclear deterrence.

Finally, this project does not provide the appropriate answer to the problems of East-West confrontation in Europe. The SDI satellites will not make it possible to hold back the Warsaw Pact forces. SDI's first effect would be the emergence of unequal zones of security: On the one hand, the superpowers, and, on the other, Europe, where public opinion is likely to be divided between those who will put their fate in the hands of the superpowers' and those who will take refuge in neutralism and pacifism.

In conclusion, SDI may completely upset the strategic concept on which peace has been based since the last war. The trouble is that this project only replaces it with a remote objective which is, to say the least, uncertain.

[Isnard] Can Europe's defense be improved with SDI? Can the French Government take the initiative in proposing to its European partners the construction of a space shield adapted to their needs (SS-22 missiles, cruise missiles).

[Quiles] The space shield envisaged in the SDI project is adapted to long-range and intermediate-range missiles. This shield would therefore have to be capable of intercepting SS-20 missiles. On the other hand it is ineffectual against short-range ballistic missiles (the SS-21, SS-22, and SS-23 missiles), not to mention planes and cruise missiles which remain in the atmosphere throughout their trajectory.

Consequently, even if a space shield corresponds perfectly to the need to protect the United States from the intercontinental ballistic threat, its contribution to the protection of Europe will be very limited and entirely dependent on the political authority which controls it.

In Europe's case, only defense on the ground can be envisaged. But an excessively large number of systems would be necessary to protect the population. In reality, a European system could only aim to defend military targets.

The idea of a European Defense Initiative [EDI] was suggested in imitation of SDI. It was raised and then rejected by the Germans. Mr Weinberger recently said it was "problematical" both financially and politically, and he gave preference to an SDI program common to the Atlantic alliance.

Our country's defense policy is based on nuclear deterrence. For this purpose we have means which we are trying to render invulnerable. An EDI-type defense system would not provide any additional guarantee to the functioning of our deterrent.

[Isnard] Will French participation in space be limited for the time being to launching, with or without its European allies, observation satellites (Helios) and communications satellites (Syracuse), excluding any armed satellites?

[Quiles] France wants the peaceful use of space. Seeking greater strategic stability in the world, it rejects any weapons in space or on earth which would threaten devices in space.

What are the broad outlines of such a policy which is aimed at "star peace"? They are essentially: communicating, watching, and listening. First communicating, because this is the essential precondition for preventing and handling any crisis which concerns us. Watching and listening are the natural complements to this.

Military programs are based on civilian activities (in other words 12,000 people and 40 percent of European personnel). For instance, my ministry allocated Fr800 million to the financing of the Spot civilian surveillance satellite program.

With regard to telecommunications by satellite, the defense system already has the Syracuse I system which enables it to cover Europe, the Mediterranean, the Middle East, Africa, the Atlantic, and part of the Indian Ocean. A more elaborate system giving better protection against jamming and attacks (Syracuse II) should follow in 1992.

The first funds for the Helios military surveillance satellite are included in the 1986 budget. The first satellite of this type should be launched in 1992.

In general, my ministry's space studies group is analyzing defense needs in many spheres like surveillance of the oceans, general electromagnetic intelligence, and future generations of surveillance satellites (radar, infrared).

[Isnard] How will France maintain the credibility of its nuclear deterrent in the medium and long term?

[Quiles] The technical and financial efforts to maintain the credibility of the nuclear threat are out of all proportion to the colossal investments involved in a strategic defense system. In this connection, I am convinced that France will always have the means of ensuring deterrence of the strong by the weak. It is to this end that I recently made important decisions in the sphere of strategic programs.

The most likely and most immediate threat is the strengthening of the conventional ABM defense systems deployed by the Soviets. I have therefore launched a program aimed at developing means which would make it possible to saturate this kind of defense system by increasing the number of attacking missiles and making them virtually undetectable.

In the longer term, many actions have been launched in key spheres such as lasers, particle beams, optics, and computers. A total of Fr600 million is being devoted to them in 1986, which shows the importance we attach to this research.

[Isnard] Do you think SDI is likely to change France's position on disarmament?

[Quiles] France's tradition is that of peace and disarmament. How can we fail to observe today that military spending makes enormous inroads on the wealth of countries, to an extent never before seen. This gives us food for thought at a time when Third World peoples need precious aid to ensure their survival. Our country has always advocated a limitation of arms and threats and we want the balance of forces to be established at the lowest possible level. It is up to the most heavily armed countries to set an example! In this spirit France has also unambiguously advocated the demilitarization of space; it made proposals aimed at this at the Geneva disarmament conference.

Thus, I would like to express my fear at seeing the development of an ABM arms race which will inevitably be accompanied by an offensive arms race aimed at achieving better penetration of defense systems. Everyone knows that the sword has always prevailed over the shield in human history. Everyone knows that the emergence of new weapons has not always had the effect of getting rid of existing ones. There is no doubt that nuclear deterrence is not about to vanish. Of course it represents the expression of a form of "balance of terror" to which it would be dangerous to become accustomed. Nonetheless, it is on the basis of this situation that the disarmament process can best be started.

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CSO: 5200/2596

SDI AND SPACE ARMS

FRENCH DEFENSE MINISTER QUILES DISCUSSES SDI, EUREKA

PM181510 Paris LIBERATION in French 10 Dec 85 pp 5, 6

[Interview with Defense Minister Paul Quiles by Jean Guisnel--date and place not given]

[Excerpts] LIBERATION: Since you became defense minister 10 weeks ago you have apparently shown great interest in the (military) "management" of crises. Was the aim of this to make the military accept that these crises are the exclusive province of the political authorities?

Quiles: As soon as I took over the Defense Ministry I had to manage a special kind of crisis: the attempt by the Greenpeace organization to hinder or prevent the French nuclear tests in the Pacific. That was a practical case which gave me considerable food for thought. I realized that if the political authorities do not directly monitor the development of a crisis and do not take the essential decisions, there is a serious danger: that of seeing those responsible for carrying out decisions, who by definition do not have all the political and diplomatic facts, taking initiatives which may aggravate the crisis.

We must be aware that a crisis is not a war and that the aim is not to defeat the adversary but to ensure that the crisis is overcome. In a paradoxical way, media silence is often proof of success.

LIBERATION: Aside from the Greenpeace affair, have you faced other tense situations since you took office?

Quiles: I can tell you, for instance, that for the 10 weeks that I have been defense minister I have regularly asked for information about what is happening in Chad. I can also tell you about another affair about which there was not much talk but with which I was closely concerned: that of "Hill 888" in Beirut. Our observers, who are very isolated, were in danger there. We had very lengthy discussions with the numerous Lebanese sides and secured the return of the French soldiers to Beirut city.

LIBERATION: General Emry said recently that the role of the French soldiers was not to be "peace-keeping soldiers." Do you think some people would "drag their feet" if the Army had to act as a buffer force again in Africa or the Middle East?

Quiles: I do not think this thinking is very widespread among the military. How could they reject the idea that the Army should also serve as a peace-keeping force in countries which are our allies? This is certainly one of the Army's finest mis-

sions, but this does not mean it is easy to carry out. People should remember Chad and Lebanon.

LIBERATION: Do you think you have made your mark on strategic questions?

Quiles: I have taken many decisions which enable me to give you a positive reply: For instance, I decided to considerably speed up our program to "aid the penetration" of missiles. The aim is to ensure that our deterrent remains credible even if the potential enemy improves its ABM defenses. Another important decision is the launching of a program to develop a new nuclear warhead which is "invisible" to radar, intended to equip the M4 missiles on submarines.

I have also decided to allocate an additional Frl billion to the program for a new generation nuclear submarine whose construction will start next year. I have asked that it be equipped with technologically advanced listening systems when it comes into service in 1994.

LIBERATION: You will be accused of giving preference to the naval component of the deterrent force once again...!

Quiles: Our deterrent is based on three components: the Albion missiles, the Mirage IV planes, and the submarines. Albion and the planes are likely to become vulnerable toward the end of this century or the beginning of the next. On the other hand, the submarines will continue to be invulnerable for a long time. It would be a serious miscalculation to deploy new systems -- like the mobile SX missile -- while we do not know the consequences of the research connected with the American SDI ("Strategic Defense Initiative" or "star wars") project.

LIBERATION: What do you think are the implications of Britain's decision to join the SDI?

Quiles: For the time being it is difficult to see what practical significance the agreement concluded between the British and the Americans could have. It has been stated on both sides of the Atlantic that there was no specific commitment.

What have the British obtained in exchange for their support for the American "star wars" project? So far it seems that:

-- There are no plans to transfer technology.

-- No proposal was made to prevent a brain drain which the British nonetheless fear.

-- British industry has not been guaranteed any number of orders or any share of the program whereas that was publicly mentioned by Britain.

Moreover, I note that British Defence Secretary Heseltine, my counterpart, explained that to obtain deals British firms will have to put forward plans which are financially and technologically competitive.

Under these circumstances there is no reason to believe that they will obtain more contracts than the French enterprises which are in a good position in the sphere of mirrors or lasers, for instance. I would like to remind people that the French Government has always said it would not be opposed to our enterprises responding to American offers in the framework of international competition.

Finally, the British agreement strikes me as essentially political, and that does not surprise me because I regard SDI as a project which is essentially political in purpose, although I do not disregard its technological repercussions, which may be considerable.

In this connection I can tell you that a commission comprising scientists and experts in military strategy is studying this question. I have just been given its initial conclusions; they will help me direct our studies and our research to enable a better knowledge of the military technologies of the future and their repercussions.

LIBERATION: Do you think the British decision is likely to have effects on the European Eureka program?

Quiles: SDI is an exclusively military research program in which the Americans have suggested the Europeans participate under conditions which have never been clearly defined.

Eureka is a mechanism designed by the Europeans to pool their scientific knowledge to carry out high technology projects in civilian spheres.

There is therefore no relationship between these two concepts aside from the desire of the public authorities in Europe and on the other side of the Atlantic to strongly stimulate research connected with the technologies of the future.

In addition, it is probable that the American military program will have civilian repercussions and it cannot be ruled out that the scientific progress which the Europeans will make thanks to Eureka may, in some cases, have military applications: powerful lasers and very large capacity computers.

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CSO: 5200/2596

SDI AND SPACE ARMS

XINHUA ON EUREKA'S ECONOMIC BENEFITS FOR EUROPE

OW221018 Beijing XINHUA in English 0847 GMT 22 Dec 85

["Year-ender: Western Europe To Meet American and Japanese Challenge in High Technology--(by Li Zhongfa)"--XINHUA headline]

[Text] Bonn, December 22 (XINHUA) -- Two high-tech programs have drawn a lot of attention in the West this year: One is the U.S. Strategic Defense Initiative (SDI) and the other is the European Research Coordination Agency's (Eureka) program. The former lays particular emphasis on the military and the latter is mainly for civilian use.

Eureka, initially proposed by France last April and officially established in July, is a research program designed to bridge Western Europe's high-tech gap with the United States and Japan. It was conceived to improve the competitiveness of the region in the world market through strengthening cooperation and concentrating all the financial, scientific and technological resources of the West European nations.

Under the Eureka program, research will be conducted in sophisticated technologies including information-processing and communications, robots, new materials, biology, oceanics, laser technology, environment protection and transport. To realize the plan, the West European nations have not only to further break down national boundaries to make full use of their high-tech research forces, but must also pool huge funds. It is estimated that within the next five years, 20 billion Deutsch marks (about 8 billion U.S. dollars) will be needed for research in a number of major Eureka items.

Since Eureka was officially born in July of this year, eighteen West European nations have taken part in the greatest joint project in Western Europe's history. The pace of the program was quickened by the second ministerial conference held last month in Hannover, Federal Germany, at which ministers of the eighteen countries decided the first ten research items of the project. They also agreed to hold the third ministerial conference in London next May.

Why are the West European nations so determined to strengthen cooperation in high-tech research? It is not by accident this has come about but rather a painful conclusion they have made from past lessons.

Over the past two decades, West Europeans failed to readjust their economic structure to meet the increased demands of the world market for new technologies and products. As a result, they began to lag behind the Americans and Japanese who were now providing some very serious competition.

It was Western Europe which produced the first computer and up until the 60s, West European computer companies had been competitive on the international market. However, they withdrew from the competition with the U.S. and Japan. They were awed by the large investments that were being made and did not foresee the important long-term impact computer technology would make on their traditional trade. As a result, the European market is now flooded with Japanese electronic products, and the United States is well in the lead in the fields of photoelectricity, artifical intelligence, high-speed computers, aeronautics and space aviation and new materials.

The lack of government support resulted in reduced funds for high-tech research. From the 40s to the mid 50s, computer research in the United States was financed mainly by the government.

Compared with the United States, which poured over 2 billion U.S. dollars into electronic and computer technology from 1958 to 1964, Britain had made a very small effort. It invested 2.5 million U.S. dollars over the same period, while Federal Germany had done almost nothing.

The Americans and Japanese have made great efforts to increase market capacity, realizing that only those who are in a dominant position can occupy or change the market. The West Europeans, however, have sat back and waited for the market to be ripe. This passive attitude also played a role in blocking high-tech development.

It was the U.S. SDI program that made the West Europeans feel the necessity of uniting to bridge the gap. They realized that concerted efforts to catch up had to be made. Otherwise, they would inevitably become junior partners or contractors or even processing factories of the United States and Japan.

The establishing of Eureka reflects the desire and determination of the West European nations to build up a technological Europe that masters all new technologies and can meet the tremendous challenge from the United States and Japan. The project is realistic when at least three favorable conditions Western Europe has are taken into account.

First, with a population of 320 million and a work force of 40 million, Western Europe has a market much larger than that of the United States and Japan.

Second, it can, though not easily, collect almost the same amount of funds for technological research and development as the U.S. and Japan do. And third, some West European countries have already carried on effective and successful cooperation over the past few years. This has occurred primarily in the fields of aeronautics and space industries, nuclear power stations and telecommunications.

In fact, the competition between Western Europe and the United States and Japan in sophisticated technology is a struggle for the control of the world market. Despite a prevailing sense of urgency for the West European countries to catch up with their competitors it will not be easy for them to reach the goal. Many difficulties still lie ahead and inevitable differences remain because of the number of countries involved.

However, progress is being made in implementing the Eureka program which is a landmark of West European effort towards this end.

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CSO: 5200/4018

U.S.-USSR GENEVA TALKS

WARSAW LE FIGARO CORRESPONDENT ON GENEVA SUMMIT

PM271724 Paris LE FIGARO in French 23-24 Nov 85 p 2

[Bernard Margueritte report: "Geneva: Eastern Europe Asks Questions"]

[Text] Warsaw -- Reactions to the Geneva summit in Poland and the socialist countries merely confirm the confusion which these talks have caused in the Eastern bloc from the start. In an official commentary the POLISH PRESS AGENCY is extremely cautious and simply writes under the heading "Almost What Could be expected" that "the Geneva summit has given Soviet-U.S. dialogue a new start and this is its significance," in spite of the fact essentially nothing has been settled.

Moreover in the socialist camp as a whole reactions vary, the greatest satisfaction being expressed in Budapest and East Berlin where there is a desire to revive East-West exchanges, whereas there is a morose atmosphere in Prague for instance. Moreover the communique published after Gorbachev's talks with the Warsaw Pact leaders in Prague talks of "complete unity" but not "completely identical views." The subtle difference in communist casuistry is important and confirms that there were lively debates in the Czechoslovak capital.

In Poland itself reactions vary a great deal according to the circle: In the population there is great hope and relief everywhere since people are convinced that the threat of war has been pushed back.

Among the party "hardliners," on the other hand, there is very obvious irritation. Some people do not hesitate to say that, in their view, Gorbachev went to Canossa not Geneva! They admit that the domestic economic situation makes it difficult for the Soviet Union to pursue the arms race and increases the need for new Western credits, but they cannot accept that Gorbachev gave in to President Reagan's firm stance and went to Geneva despite the deployment of U.S. Euromissiles and agreed to conclude bilateral agreements there without the White House abandoning its "star wars" project.

Moreover, echoing the protests of the West's "hawks," they accuse the Soviet leader of falling into a trap by giving the West the respite its needs to close the "strategic window" which gives the Warsaw Pact theoretical military superiority for some time yet.

False Start

In Solidarity circles, however, there is obvious anxiety. They think Geneva is not so much Gorbachev's Canossa as Reagan's Munich. Are we going to see a revival of detente, and are we once again going to pay the price of an agreement between the leaders of the two superpowers? They wonder with anxiety, forgetting that Solidarity is the result of detente and would never have seen the light of day without it.

Finally in government circles embarrassment prevails and nobody knows which way to turn: On the one hand they welcome the possibility of an improvement in East-West relations and the promise of vital new credits which it contains.

On the other hand, they wonder whether the Gorbachev who showed so much flexibility toward Reagan in Geneva is the same Gorbachev who, from the Kremlin, has for months been aksing the Poles to take a firmer line at home, thus jeopardizing their own relations with the West.

In addition, Gorbachev's signing of various bilateral agreements with the United States, the very day that a "Solidarity Foundation" was formed on the other side of the Atlantic by prominent Americans, is seen here in government circles as a real slap in the face.

Moreover, this may all seem very premature and exaggerated in that the "new start" made in Geneva is highly likely to look like a false start in a few months' time.

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CSO: 5200/3016

U.S.-USSR GENEVA TALKS

POLISH PARLIAMENT PASSES RESOLUTION ON GENEVA TALKS

AU031202 Warsaw TRYBUNA LUDU in Polish 28 Nov 85 p 1

["Resolution"]

[Text] (PAP)--The PPR Sejm warmly welcomes and praises the fact that CPSU General Secretary M. Gorbachev and U.S. President R. Reagan, leaders of the two powers that bear special responsibility for the fates of the present world, have begun a dialogue.

The very fact that they have met and the results of their talks that have triggered new opportunities to improve the climate of international relations are an event that is very important and that is already of positive significance for the East-West atmosphere.

Expressing the feelings of the Polish people, who are deeply committed to peace, the PPR Sejm fully supports the position assumed by the Soviet leader vis-a-vis the greatest danger of our times--the position that strives to protect the earth against nuclear annihilation, to prevent the spread of armaments to space and to considerably lower the level of nuclear and conventional armaments, while preserving all sides' right to equal security.

The Sejm expresses the conviction that the countries and nations in Europe, which was the source of the two world wars, will take the necessary steps to strengthen and specifically implement the positive process initiated in Geneva.

The Sejm appeals to the PPR Government and authorities to continue its intensive work concerning the issue of peace and war in the world and, especially, its work to consolidate peaceful cooperation, detente, and security in Europe. The Sejm will also do its best in supporting the state's peace policy.

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CSO: 5200/3017

U.S.-USSR GENEVA TALKS

FURTHER POLISH REACTION TO GENEVA SUMMIT CLOSE

SDI 'Insurmountable Barrier'

LD211925 Warsaw Domestic Service in Polish 1800 GMT 21 Nov 85

[Report by correspondent Krzysztof Wojna in Geneva]

[Text] In Geneva, the Soviet-U.S. summit meeting between Mikhail Gorbachev and Ronald Reagan has ended. The talks were summed up in a joint declaration. We link up with our correspondent, Krzysztof Wojna:

When the Geneva summit began, no one actually suspected that its results would be so positive. All in all, only one thing proved true — that the Strategic Defense Initiative [SDI], in other words, the U.S. program for militarizing space, turned out to be an insurmountable barrier. The USSR continues to believe that without closing the route toward missiles in space, there can be no talk of disarmament. Mikhail Gorbachev talked about this at length and in detail at the news conference today. If outer space becomes militarized, arms control will in fact be impossible. This is why it is so important to come to an understanding now, before it is too late. If both leaders have parted, maintaining the same stance as hitherto in this matter, then after all, it should be noted that in the joint declaration agreed upon by both sides, it is said that the Geneva disarmament negotiations will be speeded up, aimed at preventing an arms race in space, and at halting it on earth. This is a formula which was agreed upon this January by Andrey Gromyko, Soviet foreign minister, and Secretary of State George Shultz. Later, this formula was frequently, sharply criticized in the United States, particularly by Defense Secretary Caspar Weinberger, who did not go to Geneva, a fact which was noticed by everybody.

It seems that a great deal will now depend upon whether the meeting in Geneva will begin a process of increased trust between both powers. At today's news conference, Mikhail Gorbachev spoke of this very openly. Since the Americans, who have such strong armaments, do not trust the USSR and intend to build a space shield, then why should the USSR believe the United States when they say that they do not have aggressive intentions? The problem of trust is a key issue here, and that is why, for example, an agreement on exchanges such as that signed today, takes on such weight. It creates very wide possibilities for mutual contacts in very many spheres, including modern branches of science. That the Geneva summit was not a one time meeting is also especially relevant, as is the fact that the timetable for further consultations and meetings has been agreed upon. In addition, leaders at the highest level will meet in the very near future, as is stated in the joint declaration. The effects of the

Geneva summit are potentially, markedly more far-reaching on a world scale than it would appear from the documents announced. Quoting the U.S. President, we will get to know them in the approaching months and years.

Summit: Leaders' Success

LD212335 Warsaw Domestic Service in Polish 2210 GMT 21 Nov 85

["World Panorama" program presented by Jan Gadomski and Boleslaw Broszczak]

[Excerpts] [Gadomski] All the big press agencies have almost only one theme today: Geneva, Geneva, and Geneva. Tomorrow, all the papers will be filled with detailed reports. Our listeners already know much from news bulletins and from our special correspondent Drzysztof Wojna.

[Broszczak] There are also disappointments among observers of this great event. These are those who counted on a show like a boxing match, on public and sharp Soviet-U.S. arguing. Nothing of the kind happened.

The Geneva talks did not remove the differences in Soviet and U. S. approaches to important issues. But they did not turn into a struggle for a short-lived propaganda victory. The success of the summit talks, partial and compromising as it is, is the success of both leaders.

[Gadomski] While stating that, and rightly so, one must remember that the summit and its course originated in the spirit of the Soviet policy of peace. For the last 6 years the Soviet Union has been the target of unrefined attacks from the U. S. propaganda machine and also from leading U. S. politicians, but it never lost its calm and dignity, and it never rejected the policy of peaceful coexistence which was fundamental for the socialist power. If the Geneva summit has given threatened mankind a gleam of hope, that is because in spite of every contradiction, the Soviet idea of peaceful coexistence won the right to be present at the Geneva table.

[Broszczak] I think that the essence of the matter was most rightly presented by Mikhail Gorbachev who said at today's press conference in Geneva: At present there is not only the question of the confrontation of two sociopolitical systems but also of a choice between survival and mutual annihilation. We have come close to a point in which one has to stop and think and based on reality and a wide view of national interests, to decide what else may be done in the world.

[Gadomski] I will add one more quote, which in my opinion, is a key part of the joint Soviet-U. S. statement signed during the concluding ceremony of the conference. It reads: After discussing the key issues of security, the parties, aware of the particular responsibility of the USSR and the United States for preserving peace, declare that a nuclear war should never be unleashed, and that there can be no victors in it. While recognizing that every conflict between the USSR and the United States could have catastrophic consequences, they also underscored the importance of preventing any war between them, either nuclear or conventional. They will not strive to gain military superiority.

[Broszczak] Some would say that these are only words. Yes, they are words but how different from those which were coming from Washington in recent years. If these words are followed by deeds the world could become a much safer place than it is now.

'Divergences in Key Issues'

LD211630 Warsaw Domestic Service in Polish 1600 GMT 21 Nov 85

[Excerpts] The Soviet-U. S. summit meeting has ended in Geneva.

The course of the talks has been summed up in a joint Soviet-U. S. statement. It says that the main issues of bilateral relations and the present international situation have been comprehensively discussed. The talks were frank and useful. There are still serious divergences in key issues. The general secretary of the CPSU Central Committee and the President of the United States agreed to meet again in the near future. Apart from meetings between the leaders of both states, regular meetings of the heads of diplomacy and heads of other ministries and departments are envisaged.

The statement also says that after discussing key issues of security both sides came to the conclusion that a nuclear war should never be unleashed, as there can be no victor. The Soviet Union and the United States will not strive after the gaining of military superiority, and the disarmament talks conducted in Geneva are to be speeded up.

Achievements Due to USSR Policy

LD211258 Warsaw Domestic Service in Polish 1105 GMT 21 Nov 85

[Commentary by Andrzej Walatek]

[Text] Two days of intensive talks, the majority of which were conducted in private, were surrounded by secrecy. No information was given except for the fact that the talks were sincere, matter-of-fact, serious in character, and that they covered all the most important world issues.

In an announcement made today, Mikhail Gorbachev emphasized that these talks were useful. No agreement has been reached, in fact, on such fundamental issues as the elimination of nuclear weapons and armaments in space. However, it has been established that talks on these issues will be continued by Soviet and U.S. representatives in Geneva. The same can be said of the so-called regional conflicts. However, what we have agreed on, Mikhail Gorbachev stated, will bring beneficial results to the world and peace if we work in the spirit of the Geneva agreements. The Soviet Union will do everything to save peace in the world in cooperation with the United States. This we state, facing our own nation and the nations of the world, Mikhail Gorbachev concluded. The Geneva achievement will not be lost.

Commenting on this statement by the Soviet leader, one can say that this was achieved due to the Soviet Union's policy, because as we saw during the period preceding the Geneva meeting, the Soviet Union made every effort so that the summit would not be futile.

'Much More Than Expected'

LD211245 Warsaw Domestic Service in Polish 1105 GMT 21 Nov 85

[Special correspondent Krzysztof Wojna report from Geneva]

[Excerpts] The world has been awaiting news from Geneva with bated breath all morning. It is known that after the closing of the summit its results were to be announced and a news conference was to be held. Now, let us go over to our special correspondent from Geneva:

Here is Krzysztof Wojna from Geneva. The curtain has been raised and the world has learned that the summit in Geneva has made way for a fundamental change in Soviet-U.S. relations. Promptly at 1000 GMT Mikhail Gorbachev, secretary general of the CPSU Central Committee, and Ronald Reagan, President of the United States, arrived at the Geneva International Conference Center to announce the results of the 2-day talks.

An agreement on cultural cooperation is worthy of particular attention. It makes way for very broad contacts between the two nations in many areas, from sport to the most modern spheres of science. Thus, a new mechanism for consultations has been set in motion. Another summit has been announced for next year. New channels for cooperation have been opened. It is much more than anybody expected.

Now, a news conference with Mikhail Gorbachev's participation is being held in the headquarters of the Soviet United Nations Mission. I do not know yet the text of the joint Soviet-U.S. declaration, which has been agreed upon by both leaders. So, knowledge of the Geneva summit will get significantly broader within the next few hours.

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CSO: 5200/3017

U.S.-USSR GENEVA TALKS

FURTHER POLISH COMMENT ON GENEVA SUMMIT PROCEEDINGS

Press Reaction

LD221307 Warsaw PAP in English 1106 GMT 22 Nov 85

[From the press review]

[Text] Warsaw, Nov 22 -- Commenting on the Geneva summit, TRYBUNA LUDU wrote:

"The Soviet-American dialogue started in Geneva carries great importance for the whole world which undoubtedly breathes easier while listening to the joint statement issued at the end of the summit and to what Mikhail Gorbachev said elaborating on the subject.

"The ice has been broken and the way to a lasting dialogue between both superpowers and their leaders has been opened. It is precisely that dialogue, which was underscored in such a strong way by Mikhail Gorbachev at the press conference, that in the future could bring about real detente between the East and West.

The paper concludes: "The world feels safer -- this is the meaning of the Soviet leader's statement at the press conference. Geneva has brought political results, it has opened up new horizons in politics in today's world. The sooner the arms race is halted the better.

In its front-page commentary on the Geneva summit, ZYCIE WARSZAWY termed it the first momentous step and wrote:

"The 'joint statement' shows also the will to seek common ground to solve the existing problems.

"This is a breakthrough in Soviet-U.S. relations that will influence the entirety of East-West relations. Even if the Geneva summit did not bring anything more apart from this excerpt of the declaration saying that nuclear war cannot be won and that it should never be waged and that each side had renounced military superiority over the other, one could and should talk about political success of the forces of reason and realism.

"The Geneva summit was a difficult dialogue. The exchange of views was sincere, sometimes sharp and at times even very sharp. However, one had an impression that both sides attempt to make up for the lost time and to regain what was wasted by a policy of confrontation.

"Even the longest road starts from the first step and such a step was made in Geneva," ZYCIE WARSZAWY said.

Commenting on the meeting of the leaders of Warsaw Treaty member-states in Prague, TRYBUNA LUDU said that it confirms the responsibility for the peaceful development of the world. "It reaffirms the full unity of viewpoints of socialist states, their consolidation and mutual support in the process initiated by Soviet-American talks, the one that opens up new realms for the businesslike dialogue between the Soviet Union and the United States.

"In this process of opening a great role has been played by the personality of the kind of statesman Mikhail Gorbachev is.

The leaders of fraternal states in Prague, while expressing deep solidarity with the stance taken by the Soviet Union's delegation in Geneva, underlined with great approbation the personal contribution of the general secretary of the CPSU CC. It was he who in a meaningful and convincing way brought closer the socialist argumentation for the cause of preserving [word indistinct] for mankind and who proved that talks between the superpowers, albeit difficult, were possible, necessary and could be useful. [No closing quotation mark as received]

'Step in Right Direction'

LD221317 Warsaw International Service in English 2230 GMT 21 Nov 85

[Text] Here are some observations on what is certainly the question of the moment -- namely, does the just concluded Soviet-American summit in the persons of Mikhail Gorbachev and Ronald Reagan signal the start of a new dialogue between these two powers, and with it a new stage in East-West relations? The next days, perhaps even hours, will be ticking off relevant signals.

Poland is vitally interested in a favorable turn in American-Soviet relations, as it would signify the possibility of a return to the policy of detente and dialogue. Poland is in the very center of Europe, at the crossroads between East and West, North and South, and across the centuries Poland was a repeated victim of tension and confrontation, the forces of which were far from our own borders and independent of Poland's good will or policy. Hence, our consistency in desire and striving for the defusing of all tensions and the burden of confrontation, which could lead to a catastrophe of unimaginable scope.

Since, Poland's best wishes addressed to the Geneva negotiators. [sentence as heard] The very holding of the summit itself was a favorable signal to millions of people around the world, regardless of their political persuasion and world outlooks, and green light signals from Geneva a step forward despite the mutually agreed news blackout during the course of the talks. [sentence as heard] We share the general view that it was not only a case of smiles and handshakes, though these also had the significance in light of the cold war rhetorics which sounded out of Washington during the first term of office of the current White House tenant. Asked yesterday about his opinion on his talks so far with Mikhail Gorbachev, President Reagan answered with one meaningful word: Fine. In answer to relevant question the general secretary of the Soviet Communist Party described his talks with Mr Reagan as frank and businesslike.

Of all the significance, in our opinion, would be unexpectedly prolonged private sessions between both national leaders. [sentence as heard] The common opinion in Poland is that the results of the Geneva meeting have turned out to be considerably better than had been predicted by the specialists, though certainly not as good and far-reaching as were desired by the advocates of the radical improvement in international relations. And, since Mr Reagan and Mr Gorbachev acknowledged the need and the possibility of concluding their talks with a joint statement, it is clear that element of understanding and not contradictions dominated their meeting.

Of course, no one entertains the idea that a few hours of talks would yield across-the-board agreements on all disputed matters. There still are and there will be many such matters. But the important thing is that they can be discussed as was pointed out in a frank and businesslike way. Also important is the fact that both sides decleared in their statement a readiness to hold another summit in the near future.

And while there are reports of a new Soviet-American cultural agreement, of accords to open new consulates, and the normalization of air links, of essential importance we believe is the joint pledge of readiness to limit armaments. Yes, there are considerable differences on this issue. Overcoming, or at least diminishing, these differences will contribute to further disarmament negotiations which, it is universally believed, will be given a new impetus at last. Geneva should be generating more such favorable impulses. If that takes place the world will heave a sigh of relief. The Soviet-American summit was a step in the right direction.

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CSO: 5200/3019

U.S.-USSR GENEVA TALKS

POLISH RADIO, TV COMMENT ON GENEVA SUMMIT

Hopes for 'Concrete Acts'

LD230031 Warsaw Domestic Service in Polish 2300 GMT 22 Nov 85

[Text] Referring to the results of the Geneva summit, the head of the Polish diplomatic service [Foreign Minister Orzechowski] expressed hope that the positive tendencies of the meeting will be transformed into concrete acts which will bear fruit in the form of arms restrictions, the strengthening of trust, and mutually beneficial cooperation.

Reagan's Report to Congress

LD221730 Warsaw Television Service in Polish 1630 GMT 22 Nov 85

[Text] Immediately after his return from Geneva the President of the United States, Ronald Reagan, made a speech to both the houses and Congress. He expressed his conviction that the talks with Mikhail Gorbachev may constitute a key to peace and stabilization in international relations. They have made possible a better understanding by both sides for the position of the Soviet Union and the United States on major issues concerning East-West relations and the policy of arms control.

President Reagan expressed the view that the Geneva meeting was constructive and that further meetings between himself and the Soviet leader can be expected.

U.S. Congress' Response

LD221944 Warsaw Television Service in Polish 1830 GMT 22 Nov 85

[Text] President Reagan's report at the Capitol and the outcome of the summit have been greeted in Congress with satisfaction but also with a certain amount of reserve due to the impasse in arms control.

Jim Wright, the leader of the Democratic Majority in the House of Representatives, stated today that the Reagan Administration allocates excessive funds for armaments and he called for a concentration of efforts for agreeing on their reduction with the USSR.

The summit was considered to be a good beginning to the process, which ought to be continued.

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CSO: 5200/3020

U.S.-USSR GENEVA TALKS

PRC REVIEWS PROGRESS OF ARMS TALKS

HK201448 Beijing GUANGMING RIBAO in Chinese 16 Dec 85 p 4

["Year-ender" by Wang Xianhua, reporter based in Geneva: "U.S.-Soviet Contention as Viewed From the Geneva Disarmament Talks"]

[Text] Taking Turns at Escalating the Arms Race

After taking turns at escalating the arms race between them, the United States and the Soviet Union reopened the Geneva disarmament talks against the background of their hostile relations. In the 1970's, under the signboard of "detente," the Soviet Union tried its best to stockpile more nuclear arms than the United States. As a result, the Soviet nuclear strength then was more or less on par with that of the United States. The Soviet invasion of Afghanistan in 1979 led to a deterioration in U.S.-Soviet relations. By deploying SS-20 guided missiles targeted at Western Europe, the Soviet Union upset the balance of U.S. and Soviet nuclear strength in Europe and introduced panic into NATO. Since Reagan assumed power, he has adopted a hardline policy against the Soviet Union, accelerated the stockpiling of weapons, and persuaded NATO members to allow the United States to deploy Pershing II missiles and cruise missiles in their territories in order to counter the SS-20 missiles. Consequently, the confrontation between the United States and the Soviet Union became increasingly fierce. At the end of 1983, the Soviet Union announced the suspension of the disarmament talks. In March, 1983, before the dispute over the deployment of guided missiles in Europe began to subside, Reagan put forward a "Strategic Defense Initiative" (also known as "star wars") thus expanding the arms race to outer space. In order to draw public opinion to its side and to meet the challenge posed by a space arms race, the Soviet Union had to return to the conference table. In January, 1985, former Soviet Foreign Minister Gromyko and U.S. Secretary of State Shultz met and reached an agreement in Geneva, thus reopening the disarmament talks.

Proposals, Counterproposals, and Contention for Public Opinion

The reopening of the U.S.-Soviet disarmament talks injected an element of dialogue into their confrontation. Between March and early November this year, three rounds of talks were held between the U.S. and Soviet disarmament delegations with each raising proposals and counterproposals. So far, the proposal raised by Gorbachev on 3 October while visiting France, and the counterproposal announced by Reagan on 1 November, have drawn the most attention. These two proposals have some similarities. For example: Both sides agreed to reduce their strategic nuclear arms by 50 percent. Second, the Soviet Union suggested that the maximum number of warheads owned by each side should be maintained at 6,000 and that the number of medium-range guided missiles deployed in

Europe should be temporarily frozen. The United States raised no serious objections to this. However, the third round of talks between the U.S. and Soviet delegations in October was fruitless. At this round of talks, the stand adopted by the United States was markedly different from that of the Soviet Union. First, the Soviet proposal for a large-scale reduction of nuclear arms required that Reagan abandon his "star wars" program.

The United States refused to accept this. Second, the Soviet Union called for reductions in intercontinental missiles, submarine-launched missiles, and heavy bombers, whereas the United States proposed a limit to the number of intercontinental missiles but not to that of submarine-launched missiles and heavy bombers. And third, the Soviet Union called for the classification of Pershing II guided missiles and cruise missiles as strategic arms, and hence for a reduction in their numbers. However, it did not count the SS-20 guided missiles and other medium-range guided missiles targeted on Europe as strategic arms. The United States objected to this. In counting weapons and warheads, they criticized each other and refused to give in. Thus, it can be seen that both the United States and Soviet Union want to achieve and maintain military superiority and to maintain their first-strike nuclear capabilities in particular. By raising proposals and counterproposals, they are trying to enlist the support of public opinion, particularly that in Western Europe.

Differences Persist After the Summit

On 19 and 20 November, as the battle between the United States and the Soviet Union for public opinion was reaching its climax, Reagan and Gorbachev held talks in Geneva. On 21 November, they were present at the signing of a U.S.-Soviet joint declaration. As the United States and the Soviet Union are going to devote further efforts to political dialogue and bilateral intercourse, their bilateral relations would improve somewhat. This could contribute to alleviating international tension. However, they still have great differences over a number of important matters of principle. Reagan and Gorbachev "heatedly debated" the issues of "star wars" and regional conflicts. Neither side made concessions on the issues of "star wars" and nuclear arms reduction. In addition, no progress was made on the issue of prolonging the validity of SALT II and the issue of a treaty on limiting the number of antiballistic missiles. Judging by news reports and the remarks of the U.S. and Soviet spokesmen, the two sides failed to reach a consensus on either Afghanistan or Nicaragua. They only made known their general positions on reducing nuclear weapons by 50 percent and speeding up the work at the Geneva disarmament talks and the provisional agreement on medium-range missiles in Europe.

As the "Ship Rises With the Tide," Vigilance Must Be Maintained

From the course of U.S.-Soviet talks we can see some characteristics of the U.S.-Soviet contention. First, the arms race has always been a central issue in U.S.-Soviet contention. Second, the escalation of the arms race will make it more difficult to reach agreements at the disarmament talks. The United States has allocated funds for the "star wars" program and Britain has indicated its willingness to join. Some allies have also expressed their support and some companies have started research into its development. Gorbachev has publicly stated that if the United States persists in its "star wars" program, the Soviet Union will be prepared to pay any price to seek "effective countermeasures." People are worried about the prospects of the militarization of outer space and the escalation of the arms race to outer space. Third, U.S.-Soviet military contention is intertwined with their contention for the intermediate zone. Fourth, U.S.-Soviet contention is restricted not only by the domestic forces in each country but also by the growing world public opinion.

All countries in the world hope that both the United States and the Soviet Union will genuinely engage in arms reduction in order to reduce the danger of a nuclear war. However, the U.S.-Soviet summit and the long-drawn-out disarmament talks have not led to a reduction in the arms race. On the contrary, the "ship rises with the tide." For this reason, the people of the world should still maintain a high degree of vigilance.

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CSO: 5200/4017

SALT/START ISSUES

TASS ON U.S. VIOLATIONS OF SALT II

LD291220 Moscow TASS in English 1131 GMT 29 Nov 85

/Text/ Moscow 29 TASS--TASS military news analyst Vladimir Bogachev writes:

The official functions of the U.S. Arms Control and Disarmament Agency which were formulated when it was being founded are to supply the U.S. Congress with estimates of the influence of the Pentagon-suggested military programs on the course of talks on limiting and reducing arms and to work out conclusions as to whether new U.S. weapon systems conform to the already reached international agreements. As was contemplated by the founders of the agency, it was to serve as a counterbalance to the Pentagon which, as a rule, insists on an unrestrained augmentation of U.S. military expenditures.

No one in the United States has even recalled this function of the agency over the past 5 years. The agency headed by its director Kenneth Adelman is more preoccupied with compiling falsehoods for the Congress and the press, the falsehoods which are aimed at "substantiating" the nuclear arms buildup by the United States, at justifying in the eyes of the public the U.S. side's renunciation of still effective accords and at camouflaging the U.S. violations of international agreements.

The U.S. Arms Control and Disarmament Agency has turned into a propaganda affiliate of the Pentagon. The agency's director Kenneth Adelman only plays up to the Pentagon chief Caspar Weinberger who is notorious as an inveterate opponent of any agreements with the USSR.

It is precisely for the purpose of justifying Washington's course of building up U.S. weapons of mass destruction that Adelman resorts to mendacious insinuations that the Soviet Union does not allegedly fulfill its treaty obligations. At a briefing for foreign jounalists, the director of the Arms Control and Disarmament Agency came forward with a statement that the United States ostensibly continues to implement the provisions of the SALT II treaty, which remains unratified through the fault of Washington, and that the Soviet Union allegedly violates the treaty provisions.

Such statements on the part of Washington give rise to perplexity, at least. Really, the United States is now creating a new ICBM, the Midgetman, and is completing tests of another one--MX. Meanwhile the creation by any of the

sides of more than one new ICBM is in no uncertain terms forbidden by the Soviet-Amercian SALT II treaty. The United States violates also other provisions of the SALT II treaty.

In order to justify this glaring violation of the treaty obligations by the United States, Adelman states that the United States will observe the provisions of the treaty until the Russians violate it. In the style of the worst traditions of the Pentagon, he at once produces "evidence" that two new ICBMs are being developed in the USSR as well. In so doing he presents the modernized version of an old Soviet missile RS-12 as the second "new type" of a Soviet ICBM. Adelman is not embarrassed by the fact that the USSR has presented concrete facts which convincingly show that the characteristics of the modernized missile fully accord with the respective provisions of the SALT II.

Over the period that has passed since the signing of the SALT II treaty, the USSR has done nothing to circumvent its provisions. It strictly abides by the levels established by the SALT II. The Soviet Union has dismantled about 250 strategic systems so that the established lvels of strategic arms would not be exceeded. The USSR's other obligations under the treaty are likewise strictly observed: sublevels for MIRVs and limitations on qualitative upgrading of strategic systems.

The Soviet Union does not seek military superiority, and it has no stimuli to renounce the accords. The Soviet Union's positive attitude to the SALT II treaty has never changed. On the other hand, since the beginning of the eighties, the United States has embarked upon the path of gradual crawling out of the treaty, on the path of violating the treaty provisions. The Pentagon chief does not conceal his attitude to the SALT II, constantly referring to it as a pseudoagreement on arms control, and advises the U.S. President to renounce it altogether.

During the briefing for jounalists, Adelman did not limit himself to falsifying facts concerning the implementation by the United States of the treaty on the limitation of the strategic offensive arms. Touching upon the U.S. "Star Wars" plans, he expressed a fantastic supposition that Washington would manage to make the Soviet Union abandon its principled line towards preventing militarization of outer space and would make it reconcile itself to the U.S. "Strategic Defense Initiative."

This won't work, Mr Adelman!

/12228
CSO: 5200/1196

SALT/START ISSUES

BRIEFS

OBSERVANCE OF SALT II--Washington 21 Nov TASS--By TASS correspondent Nikolay Turkatenko. The authoritative Arms Control Association has published a well-argumented report justifying the need for the United States and the Soviet Union to undertake a pledge to strictly observe the SALT II treaty, as yet unratified by the United States. The report graphically reveals that the observance of the treaty, which expires in December this year, meets the vital interests of security both of the Soviet Union and the United States. The SALT II treaty restricts the buildup of strategic nuclear armaments, which not only helps prevents the continuation of the ever more dangerous race of strategic nuclear armaments, but also makes it possible to save substantial material resources, the document stresses. According to the authors of the report, the pledge to continue living up to the SALT II treaty would ensure a reliable foundation for the elaboration of a new Soviet-American agreement on strategic armaments. /Text/ /Moscow TASS in English 1215 GMT 21 Nov 85 LD/ 12228

CSO: 5200/1196

CHEMICAL/BIOLOGICAL WEAPONS

TASS: USAF REPORT, SENATE VOTE INCREASE CW TENSION

LD171841 Moscow TASS in English 1820 GMT 17 Dec 85

["U.S.: Propaganda Cover for Chemical Re-Armament" -- TASS headline]

[Text] Moscow, December 17 TASS -- TASS commentator Vadim Biryukov writes: The Pentagon has repeatedly tried to convince people that the Agent Orange defoliant is not at all as noxious as described and that the incidence of cancer among the Vietnam war veterans who have been exposed to it is not higher than that among the other Americans.

If one is to believe an upbeat special report on the theme, which has been released by the U.S. Air Force staff, Agent Orange is nearly as harmless as an aftershave.

Only it becomes utterly incomprehensible then what has killed the enormous number of people in the Indochina, who died from poisoning during the U.S. aggression against Vietnam, and why thousands of former GI's and their relatives are still demanding that the Pentagon pay damages to them for their loss of health or the death of their near ones.

The USAF report trying to whitewash these crimes cannot be treated with anything but resentment. It also gives rise to the legitimate question of why Washington is trying to stubbornly to prove what is unprovable.

The answer is self-evident: The Senate-House Conference Committee has approved a bill on appropriations for specific Pentagon programs, including 126 million dollars to start the full-scale production of binary weapons, a fundamentally new kind of chemical ammunition. But the bill is yet to be finally endorsed by the Senate and the House. So in the Pentagon they have decided to back up their criminal undertaking with a "propaganda cover".

The joint Soviet U.S. statement issued after the Geneva summit meeting said: "In the context of discussing security problems, the two sides reaffirmed that they are in favor of a general and complete prohibition of chemical weapons and the destruction of existing stockpiles of such weapons. They agreed to accelerate efforts to conclude an effective and verifiable international convention on this matter."

The results of the Geneva dialogue should be consolidated with practical steps towards reducing the war threat on earth and lessening international tension. But the vote in the Senate-House Conference Committee and the pseudoscientific, false report issued by the U.S. Air Force staff are steps going in the opposite direction. They run counter to efforts to deliver humanity from chemical weapons whose stockpiles in the United States are already enough to kill all living on earth several times.

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CSO: 5200/1194

CHEMICAL/BIOLOGICAL WEAPONS

USSR: REAGAN CW REMARKS MIX 'PEACEABLENESS, BELLICOSITY'

LD122213 Moscow in English to Great Britain and Ireland 2000 GMT 12 Dec 85

[Excerpts] In an interview with the West German magazine DIE WELT, President Reagan touched upon the problems of banning chemical weapons. Our observer, Viktor Yenikeyev, comments:

President Reagan's replies were a blend of peaceableness and bellicosity. For instance, he voiced satisfaction with Mikhail Gorbachev's approach to the problem of banning chemical weapons and regretted the lack of progress at the Geneva talks on chemical weapons. On the other hand, the President made it clear that America would continue building up its stockpiles of chemical weapons in response to what he termed as Soviet potentialities in the field.

This remark greatly devalues his peace rhetoric; in fact this means the United States will continue implementing its chemical rearmament program worth over 10 billion dollars. Such, regrettably, has been Washington's standard reply to the vigorous efforts the Soviet Union has been bending over many years to sign an agreement that would ban chemical weapons once and for all.

The United States has stockpiled such an immense arsenal of toxic chemicals that would be enough to destroy everything living on earth several times over. More than that, America has developed a new and more deadly chemical weapon, binary shells, designed as before for deployment in Europe. The Pentagon plans to outfit Pershing and Tomahawk missiles in the NATO countries with them. As the tragedy in Bhopal showed, conventional chemicals can trigger off a global disaster. If you recall, there was a poisonous gas leak at the Union Carbide factory in that Indian city. Concrete measures are needed to eliminate this danger. Regrettably, President Reagan did not say anything about that in the interview with DIE WELT.

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CHEMICAL/BIOLOGICAL WEAPONS

TASS: NATO'S CARRINGTON ADVOCATES BINARY WEAPONS 'BUILD UP'

LD131918 Moscow TASS in English 1742 GMT 13 Dec 85

[Text] Moscow, December 13 TASS -- TASS news analyst Vasiliy Kharkov writes:

NATO Secretary General Lord Carrington has called upon the United States and NATO to build up the stocks of chemical weapons. The evidence of that is his interview printed on Thursday in the Austrian newspaper DIE PRESSE. Lord Carrington, one of the main advocates in Western Europe of the Washington "star wars" programme, also declared for additional armament of NATO with chemical warfare agents. Arguments that Lord Carrington is resorting to have wholly been borrowed from the Pentagon. Among them is the self-made hackneyed myth of a "Soviet threat". Under that false pretext the United States started deploying its Pershing and cruise missiles in Western Europe. And now came the turn of binary munitions, the most barbarous type of chemical weapons.

But Lord Carrington lets the cat out of the bag when he declares that chemical weapons, along with nuclear weapons, should become the decisive factor of intimidation. One feels here not only the obvious threat to the Soviet Union, but also the admission that in NATO's plans these two types of weapons of mass destruction are supposed to be used simultaneously, and at the very beginning of a possible conflict.

The incumbent Washington administration has drawn up a broad-scale programme of modernisation of U.S. chemical arsenals through binary munitions. That programme projecting a rise in the quantity of chemical munitions from 3 million to 5 million units will reportedly cost approximately 10 billion dollars.

The Pentagon intends to deploy binary weapons above all on the territory of Western Europe where there are already vast stocks of older American chemical munitions.

The calls of the Nato secretary general enhance the feeling of concern of the European peoples who firmly declare that chemical weapons should have no place in the European continent. The reflection of those sentiments was the proposal of the governments of the GDR and Czechoslovakia to the FRG Government that negotiations be held on establishing a zone free from chemical weapons in the centre of Europe.

The joint statement of the leaders of the USSR and the USA in favour of universal and complete liquidation of such barbarous weapons of mass destruction as chemical weapons is of fundamental significance. The sides, it is said in the joint Soviet-American statement, agreed to step up efforts in this direction.

Lord Carrington should seemingly abide by the postive accords that were reached in Geneva and which open up possiblities for recovery of the international situation.

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CHEMICAL/BIOLOGICAL WEAPONS

BRIEFS

TASS ON U.S. CW FUNDING--New York, December 3 (TASS)--Almost 1.1 billion dollars are allocated in 1986 fiscal for the program of the "modernization of chemical weapons" in the United States, the PHILADELPHIA INQUIRER reports. Of that amount 163.5 million dollars are to be spent on the research, development and beginning of production of new supertoxic chemicals and warheads, such as 155-mm artillery shells and 200-kg "big eye" bombs filled with a nerve gas. According to the paper, about four billion dollars have been spent since 1978 on the program of "modernization of chemical weapons." The Pentagon presses for the allocation of a further five billion dollars for the same purposes in the coming four years. [Text] [Moscow TASS in English 2328 GMT 2 Dec 85 LD] /12858

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EUROPEAN CONFERENCES

TASS: SECURITY, DISARMAMENT CONFERENCE OPENS IN GENEVA

Tolkunov, Perle Remarks

LD171048 Moscow TASS International Service in Russian 2015 GMT 16 Dec 85

[Report by TASS correspondent Yevgeniy Korzhnev]

[Excerpts] Geneva, 16 Dec (TASS) -- The international conference on the theme "Security and Prospects of Disarmament in Europe," which opened today in the Geneva Palace of Nations, may serve as evidence of the great interest the world public is showing in the recent Soviet-U.S. summit-level meeting. Such questions as the state of talks on questions of European security and disarmament, nuclear and space weapons, and conventional and chemical weapons are included on the agenda.

The main problem of the present day is the problem of guaranteed peace for present and future generations, Lev Tolkunov, chairman of the Soviet of the Union of the USSR Supreme Soviet, chairman of the Soviet Committee for European Security and Cooperation, stated in opening the debates. In the nuclear missile age, security cannot be guaranteed by military means and military force. The speaker stressed, however, having noted the significance of the Geneva meeting, that the real significance of everything positive which its participants agreed on can manifest itself only in practical deeds. This concerns the creation of the possibility of a real halt to the arms race and of adopting practical steps in the reduction of stockpiled nuclear arsenals. But for a radical reduction in nuclear weapons it is absolutely essential to firmly shut the door to weapons being used in space.

Progress along the road of ensuring security and cooperation in Europe, Lev Tolkunov said in conclusion, is impossible without the creation of a system of wide political dialogue, entailing close cooperation between the states, public, and political forces of our continent; without expanding contacts between representatives of the public, science, and culture; and without developing relations between the peoples of Europe in the interests of peace and cooperation, in the interests of mutual spiritual enrichment.

A speech by Richard Perle, U.S. secretary of defense for international security policy, produced discord. From Perle's words it follows that at the Soviet-U.S. negotiations on nuclear and space armaments, which resume in January, the Americans intend to conduct the previous line, focusing attention on strategic and medium-range armaments and leaving space weapons aside. But the majority of the participants perceive a new significant threat for the fate of the world posed by the SDI program.

Additional Reportage

PM181443 Moscow IZVESTIYA in Russian 18 Dec 85 Morning Edition p 5

[Dispatch by own correspondent V. Kuznetsov under the rubric "On Topics of the Day": "For Broad Political Dialogue"]

[Text] Geneva — The international "Security and the Prospects of Disarmament in Europe" conference, convened at the initiative of the UN institute for the study of disarmament problems and the French institute of international relations, has begun work in the Palais des Nations.

Taking part in the conference are eminent political and public figures and scientists from the Soviet Union and other European countries and the United States.

The agenda includes questions of halting the arms race on earth, preventing it in space, strengthening trust, and seeking new paths of cooperation.

Addressing the conference, L.N. Tolkunov chairman of the USSR Supreme Soviet's Council of the Union and chairman of the Soviet Committee for European Security and Cooperation, stated that in the nuclear missile and space age security cannot be safeguarded by military actions and military force. What is needed now is flexible realism and political boldness, the boldness to take steps which can in practice move matters from a standstill, put an end to the arms race, and initiate the process of arms reduction.

Speaking of the results of the summit meeting in Geneva and the prospects of the development of international relations, L.N. Tolkunov stressed that the results of the meeting should be used to accelerate talks on nuclear and space armaments. At the same time, the very fact that talks are continuing should not serve as justification or cover for the arms race. The elimination of the nuclear threat requires a responsible approach and further efforts on the part of all states and peace-loving sociopolitical forces. Touching on the situation in Europe, L.N. Tolkunov pointed out that further headway on the path of safeguarding security and cooperation in Europe is impossible without setting up a system of broad political dialogue implying close collaboration between our continent's states and sociopolitical systems. The Soviet Union, he said in conclusion, will seek the development of the process of the relaxation of international tension, regarding it as a natural and essential stage on the path toward an all-embracing and reliable system of security.

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EUROPEAN CONFERENCES

PRAVDA CITES CSSR DELEGATE AT MBFR TALKS

PM221631 Moscow PRAVDA in Russian 22 Nov 85 Second Edition p 5

[TASS report: "At the Vienna Talks"]

[Text] Vienna, 21 Nov--Speaking today at a plenary session of the talks on the Mutual Reduction of Armed Forces and Armaments in Central Europe, the head of the CSSR delegation Ambassador L. Handl stressed the special importance of the Soviet-American summit meeting in Geneva. This meeting, he noted, will no doubt influence the further development of the international situation, the disarmament process, and also the Vienna talks.

The head of the CSSR delegation pointed up the importance of not increasing the levels of the sides' armed forces and armaments in Central Europe in the context of the socialist countries' proposals of 14 February 1985 on initial reductions. While the sides intend seriously to make efforts aimed at securing military detente and improving the military and political situation in Central Europe, they must primarily halt the process of building up armed forces and armaments in that region. The implementation of this measure would facilitate a future shift to more large-scale steps leading to a lessening of military confrontation. However, the West is constantly trying to evade a solution to the problem of freezing arms levels, referring to its complexity. It is necessary primarily to halt the arms race, with a view to reducing armaments and starting real disarmament, L. Handl stressed.

In order to promote the search for a mutually acceptable solution to the problem of freezing arms, he continued, we will leave aside at this stage the question of modernization and propose assuming a pledge merely not to increase the level of the main types of armaments in existence at the time the agreement enters into force. However, it is extremely important during the period of operation of the interim agreement not to permit any deployment under the guise of modernization of qualitatively new systems of conventional weapons in Central Europe, whose destructive force would be similar to that of weapons of mass destruction.

In conclusion L. Handl stressed that the desire of the Warsaw Pact countries to obtain a businesslike and constructive response from the West to their

proposal is by no means a "preliminary condition" and certainly not an ultimatum. A positive response from the West would show the seriousness of the West's intentions to discuss the substance of the proposal and would help to define it in the main, which in turn would assist the search for possible compromise solutions on individual aspects.

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EUROPEAN CONFERENCES

USSR'S MIKHAYLOV BRIEFS PRESS ON PROGRESS OF MBFR TALKS

West's Proposal 'Distorts' Mandate

LD171729 Moscow TASS in English 1723 GMT 17 Dec 85

[Text] Moscow, December 17 TASS -- A briefing for Soviet and foreign journalists on the results of the latest, 37th, round of the Vienna talks on mutual reduction of forces and armaments in central Europe was held at the press centre of the USSR Foreign Ministry today.

Speaking at the briefing, the head of the Soviet delegation at the Vienna talks Ambassador Valerian Mikhaylov noted that the delegations of the USSR and other Warsaw Treaty countries at that round of the talks, too, were urging Western partners for businesslike and constructive discussion of the proposal of the socialist countries of February 14 inst. [of this year] which envisages the initial reduction of land forces and armaments in central Europe by the Soviet Union and the United States with the subsequent non-increase of the level of forces and armaments in the area by all parties to agreement.

Advancing their proposal the Warsaw Treaty countries proceeded from the view that in conditions of the impasse of the Vienna talks the achievement of, even if limited, intermediate agreement would be an initial practical step toward the lowering of the level of confrontation in the centre of Europe.

The head of the Soviet delegation noted that in the course of the passed round of the talks, the Western participants, as before, have not shown the readiness to a concrete discussion of the essence of the socialist countries' proposal. It is only at the latest plenary meeting of December 5 that representatives of NATO countries came up with their suggestions in reply. This time they also declared for initial reductions of Soviet and American troops, but in lesser volumes, and without arms reduction. They also declared that they consent to the freezing of the levels of troops, but without that obligation being applied to armaments.

We positively assess the very fact of the answer of the Western participants, the answer in which a certain step is made toward the February proposal of socialist countries, the head of the Soviet delegation said. But alongside separate constructive provisions the Western proposal contains a number of elements that are not in keeping with the principle of equality and equal security. The main drawback of the proposal of NATO countries is that instead of efforts for real lowering of the level of military confrontation in the centre of Europe it advances proposals on control that are widened so much as to become unacceptable.

Ambassador Valerian Mikhaylov recalled that the proposal of socialist countries of February 14 of the current year envisages that the forces of the USSR and the USA together with their prescribed armaments and military equipment be reduced within a year by 20 thousand and 13 thousand men respectively with the subsequent freezone for two years of the level of forces and armaments in central Europe of all states, parties to agreement on both a collective and national basis.

Answering questions from correspondents, the Soviet representative said that considerations of the Western side in reply were set out in a generalized form in speeches and pronouncements of its representatives. No common document has been advanced. He also noted that the West's proposals show a trend toward the revision of the mandate of the Vienna talks.

As is known, the ambassador went on to say, the subject and objective of the Vienna talks were formulated as mutual reduction of forces and armaments and related measures in central Europe.

Meanwhile, Western participants in their proposals bring to the minimum the personnel reduction, avoid arms reduction and limitation altogether, while seeking to widen indefinitely the measures of control, inspection and so on. All this clearly distorts the mandate of the talks agreed upon in the past, the Soviet representative said in conclusion.

'Positive Fact' of NATO Response

LD180155 Moscow Television Service in Russian 2144 GMT 17 Dec 85

[From the "Novosti" newscast]

[Text] A briefing for Soviet and foreign journalists on the results of the latest round of the Vienna talks on the reduction of armed forces and armaments in central Europe was held in Moscow at the USSR Foreign Ministry press center.

Valerian Vladmirovich Mikhaylov, the leader of the Soviet delegation at the talks, noted that the delegations from the USSR and other Warsaw pact member-states, striving to achieve a practical shift, came forward with a concrete proposal which envisages a reduction in the Soviet and U.S. forces together with their standard weapons and military technology by 20,000 and 13,000 people respectively with a subsequent freeze for 2 years of the level of forces in central Europe.

Comrade Mikhaylov went on to say: However, one has to ascertain that in the course of this last round of talks, the Western participants did not manifest a readiness for specific discussion of the substance of our proposal. Nevertheless, as you know, at the last plenary session on 5 December, the NATO countries replied with their ideas. We appraise positively the very fact that the Western participants replied to the Warsaw Pact countries' proposal, considering that this type of exchange of signals, the development of political dialogue, corresponds to the accords from the Soviet-U.S. summit level meeting in Geneva. We naturally, are currently carefully examining the reply by the Western side in order to clarify to what extent it could further progress in Vienna.

The main shortcoming of the NATO countries' proposal consists in that it -- this proposal -- nullifies efforts for a real lowering in the level of military confrontation in the center of Europe, substituting them with verification measures that have been deliberately raised too high. This circumstance cannot fail to evoke the question: What is the purpose of doing this? After all, verification must be commensurate with the obligations following the agreement, and further their fulfillment by the sides, not serve as a source for mistrust and suspicion. So, our proposal and the Western one are as yet divergent in many respects. One would like to hope that in the course of further negotiations, realistic and mutually acceptable solutions will finally be found by the efforts of both sides.

'Constructive Elements' in Proposal

LD171744 Prague CTK in English 1641 GMT 17 Dec 85

[Text] Moscow, Dec 17 (CTK correspondent) -- Ambassador Valerian Mikhaylov, head of the Soviet delegation to the Vienna talks on reduction of armed forces and armaments in central Europe, pointed out at a press conference here on the 37th round of the talks that the delegations of the socialist countries again called on their Western partners to constructively consider the Warsaw Treaty proposal for initial reductions of Soviet and U.S. forces and subsequent freeze of forces and armaments in central Europe.

The socialist countries proposed that the Soviet forces be reduced by 20,000 men and the U.S. forces by 13,000 men within a year, and that the forces and armaments of all participants be freezed for two years, Ambassador Mikhaylov said, adding that at the last plenary session of the 37th round on December 5, NATO countries put forward a counter-proposal for a smaller reduction, not applying to weapons.

He said that the response in itself was a positive fact. "We are now carefully considering the response of the Western side, to ascertain to what extent it can contribute to progress at the talks."

The Soviet delegate added that along with certain constructive elements, the NATO proposal contains a number of controversial provisions which are not in keeping with realism and the principle of equality and equal security. "The main shortcoming of the NATO proposal is that it impedes efforts at a realistic lowering of the level of military confrontation in central Europe, substituting them with deliberately inflated verification."

'Excessive Monitoring Measures'

AU171637 Paris AFP in English 1633 GMT 17 Dec 85

[Text] Moscow, Dec 17 (AFP) -- New NATO proposals at talks for the reduction of conventional forces in central Europe are "in themselves a positive factor," the Soviet chief negotiator said here, but stressed that the positions of the two sides were "still very divergent."

Negotiating chief Valerian Mikhaylov, speaking at a press conference here six weeks before the Mutual and Balanced Forces Reduction (MBFR) talks resume in Vienna, said the Western proposals still bore "a series of doubtful elements." They "do not respond to the demands of realism and to the principle of equality and equal security," he said.

He singled out what he termed "deliberately excessive monitoring measures" in the North Atlantic Treaty Organisation package, put forward on the proposals chiefly call for the creation of a permanent monitoring stations to oversee any agreement in troop reductions, and for authorisation to carry out on-site inspections.

Mr. Mikhaylov said that the figures for troop reduction quoted in the NATO proposals do not lead to a "real lowering of the level of military confrontation," especially as they failed to mentioned the withdrawal of military materiel as well as men. The Atlantic alliance has suggested the pullout of 5,000 U.S. and 11,500 Soviet troops over a one year period.

The Soviet Union, in a proposal put to the MBFR talks in February, wants a reduction of 13,000 U.S. and 20,000 Soviet troops in the first year, coupled to a three-year undertaking by both sides not to boost their conventional armed forces or arms.

Although the two sides have already reached agreement to reduce their forces in Europe to 700,000, or 900,000 if air force personnel is included, even this accord has been hamstrung by divergence over troop numbers. The West maintains that the Soviet Union and its allies have a numerical supremacy of around 180,000 men. Moscow denies the figure, and contends that the two sides are roughly equal in number.

The MBFR, which gathers 12 NATO members and the seven Warsaw Pact countries, is scheduled to open for its 38th round on January 30.

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EUROPEAN CONFERENCES

TASS CITES CDE DELEGATES ON SUMMIT

FRG, Finnish Delegates

LD301507 Moscow TASS in English 1350 GMT 30 Nov 85

[Text] Stockholm, November 30 TASS--TASS correspondent Nikolay Vukolov reports:

We welcome the joint statement on the results of the Soviet-U.S. summit meeting in Geneva and, first and foremost, those of its elements which are projected into the future, Klaus Citron, head of the West German delegation at the Stockholm conference on Confidence- and Security-Building Measures and Disarmaments in Europe, told the TASS correspondent. These include, above all, the readiness to make joint efforts to put armaments under control, prevent a new war from breaking out and continue the dialogue, which was confirmed by the two states' leaders.

Of major importance is the fact that the statement puts special stress on the progress of the Stockholm conference and the need to bring it to successful fruition. The results of the Geneva meeting will help energize work at the Stockholm negotiating table and apply a concrete nature to it, K. Citron said.

I would like to express satisfaction with the results of the meeting in Geneva and their significance for the Stockholm conference, head of the Finnish delegation Matti Kahiluoto stressed. The leaders of the USSR and the United States declared for adopting a document of the forum to include both mutually acceptable confidence- and security-building measures and the moves to concretize and impart maximum effectiveness to the principle on the non-use of force. One should hope that the Geneva summit will give a fresh impetus to working out such a document of the Stockholm forum within the shortest possible time so that at their Vienna meeting the representatives of the participating states in the All-European Conference on Security and Cooperation could pass over to formulating a mandate concentrating directly on the disarmament problems. I believe that a good atmosphere has been created at the conference now and all delegations are willing to conduct constructive and concrete talks, the Finnish representative observed.

USSR's Grinevskiy

LD221841 Moscow TASS in English 1813 GMT 22 Nov 85

[Text] Stockholm, November 22 TASS--The results of the Soviet-U.S. summit meeting in Geneva have riveted the interest of the participants in the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe, summing it up as an event of international importance.

Speaking at the conference's plenary meeting, leader of the Soviet delegation Oleg Grinevskiy called the forum's attention to the indepth assessments of the current dangerous turn of events in the world and the ways of overcoming it, which were made by Mikhail Gorbachev, general secretary of the CPSU Central Committee, at a news conference in Geneva. The results of the meeting and the shared intent expressed there to facilitate an early and successful completion of the Stockholm conference, the Soviet representative said, can have a fruitful effect on the elaboration of mutually acceptable accords.

USSR's Grinevskiy Cites Gorbachev

LD291326 Moscow TASS in English 1120 GMT 29 Nov 85

[Text] Stockholm, November 29 TASS--The report delivered by Mikhail Gorbachev, general secretary of the CPSU Central Committee, at the session of the USSR Supreme Soviet and his statement on the Soviet Union's readiness to implement the Geneva agreements into practical deeds received wide acclaim at the Stockholm Conference on Confidence- and Security-Building Measures and Disarmament in Europe. Oleg Grinevskiy, head of the Soviet delegation, drew attention to important assessments contained in the report, of the results of the Soviet-American summit meeting and international situation as a whole. The results of the Geneva meeting, W. Konarski, head of the Polish delegation, stressed, make it possible to abandon the present dangerous situation of confrontation in favour of seeking ways of improving international situation.

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EUROPEAN CONFERENCES

BRIEFS

IZVESTIYA NOTES CDE RESOLUTION--Stockholm, 14 Dec--A resolution has been adopted at the Stockholm Conference on Confidence-Building Measures and Security and Disarmament in Europe on appointing coordinators in working groups for moving toward the editing of a draft document which would include both specific commitments on the nonuse of force and mutually acceptable confidence-building measures. This step, Ambassador G. Buehring, head of the GDR delegation, stated, reflected the spirit of Geneva: It marks the practical implementation of the Soviet-U.S. agreements to promote the speediest completion of the Stockholm conference. Ambassador A. Ciarapica, the Italian representative, stressed that the Geneva summit had given a boost to the more dynamic development of the Stockholm talks. [TASS report: "At the Stockholm Forum"] [Text] [Moscow IZVESTIYA in Russian 15 Dec 85 Morning Edition p 4 PM] /12858

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